Hawkesbury City Council

Attachment 1
to
item 132

Streeton Lookout
Draft Plan of Management
and Master Plan

date of meeting: 14 July 2009
location: council chambers
time: 5:00 p.m.

STREETON LOOKOUT

FREEMANS REACH

Draft Plan of Management

6 March 2009

prepared by

LandArc Pty Limited

Landscape, Environmental and Heritage Consultants

CONTROLLED DOCUMENT
Draft Issue B: 6 March 2009

This Plan of Management for
Streeton Lookout, Freeman's Reach
was prepared by

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1.0 LAND DESCRIPTION AND PLANNING

1.1 INTRODUCTION

1.1.1 WHAT IS A PLAN OF MANAGEMENT?

A community land plan of management provides the framework for managing community land and must be prepared in accordance with the *Local Government Act 1993* and other relevant legislation and policies. Streeton Lookout is community land owned by Hawkesbury City Council. This plan of management has been prepared by LandArc Pty Limited for Hawkesbury City Council under the direction of Council's Land Management section.

1.1.2 AIMS AND OBJECTIVES

This plan of management aims to contribute towards Council achieving its strategic goals, vision and strategic outcomes as identified in the *Hawkesbury City Council Management Plan.* Sustainability is a key principle guiding this process. The plan of management aims to contribute to an ecologically sustainable city and region and add to the quality of life in the Hawkesbury City local government area (LGA).

This plan of management aims to support the principle that all elements of the environment must stand in balance, contribute to an ecologically sustainable city and region and add to the quality of life within the Hawkesbury City LGA. Hawkesbury City Council's strategic planning process has identified a number of reserves (including Streeton Lookout) as significant and/ or priority areas for preparation of plans of management. This plan of management for Streeton Lookout supersedes earlier generic plans of management which included this reserve.

It is important that the plan of management identifies the reserve's natural, scenic, cultural, social and recreational values and establishes how they should be protected, managed and enhanced for the existing community and for future generations. Accordingly, the plan of management focuses on the longer term objectives of sustainable management and follows a values-

based approach rather than being simply issues-driven. The following steps have guided preparation of this plan of management:

1.0 LAND DESCRIPTION AND PLANNING

- review existing zoning provisions under Hawkesbury City Council's Local Environmental Plan (LEP 1989 as amended);
- identify current uses and condition of the land, and any buildings or other improvements;
- establish community land categories in accordance with the *Local Government Act 1993* and *Local Government (General) Regulation 1999* and identify core objectives for each of these categories; and
- address future permitted uses and development (including intensity and scale) and future leases/ licences.

2.0 COMMUNITY CONSULTATION

- identify and assess community and stakeholder issues affecting the community land; and
- determine community goals, values, needs and expectations for the future use and management of the reserve.

3.0 BASIS FOR MANAGEMENT

- define the community land's role within the local area and broader regional context (including regional tourism);
- identify and assess key values associated with the community land including the river/ riparian corridor and it's scenic qualities, natural, Aboriginal and cultural heritage, biodiversity and endangered ecological communities, tourism and recreational values;
- assess the impact of existing uses and management regimes or future development on identified key values; and
- establish the framework for sustainable management strategies.

4.0 MANAGEMENT STRATEGIES

- specify the purposes for which the land, buildings or improvements, will be permitted to be used;
- specify the purposes for which any further development of the land will be permitted, whether under lease or license or otherwise;
- describe the scale and intensity of such permitted use or development;
- develop appropriate performance targets (management objectives), means of achieving these targets (management actions) and means of assessing Council's performance with respect to objectives;
- assign directions and priorities (spanning the next 5-years); and
- develop a master plan for implementation of the strategic plan.

1.1.3 LIST OF ABBREVIATIONS USED IN THIS STUDY

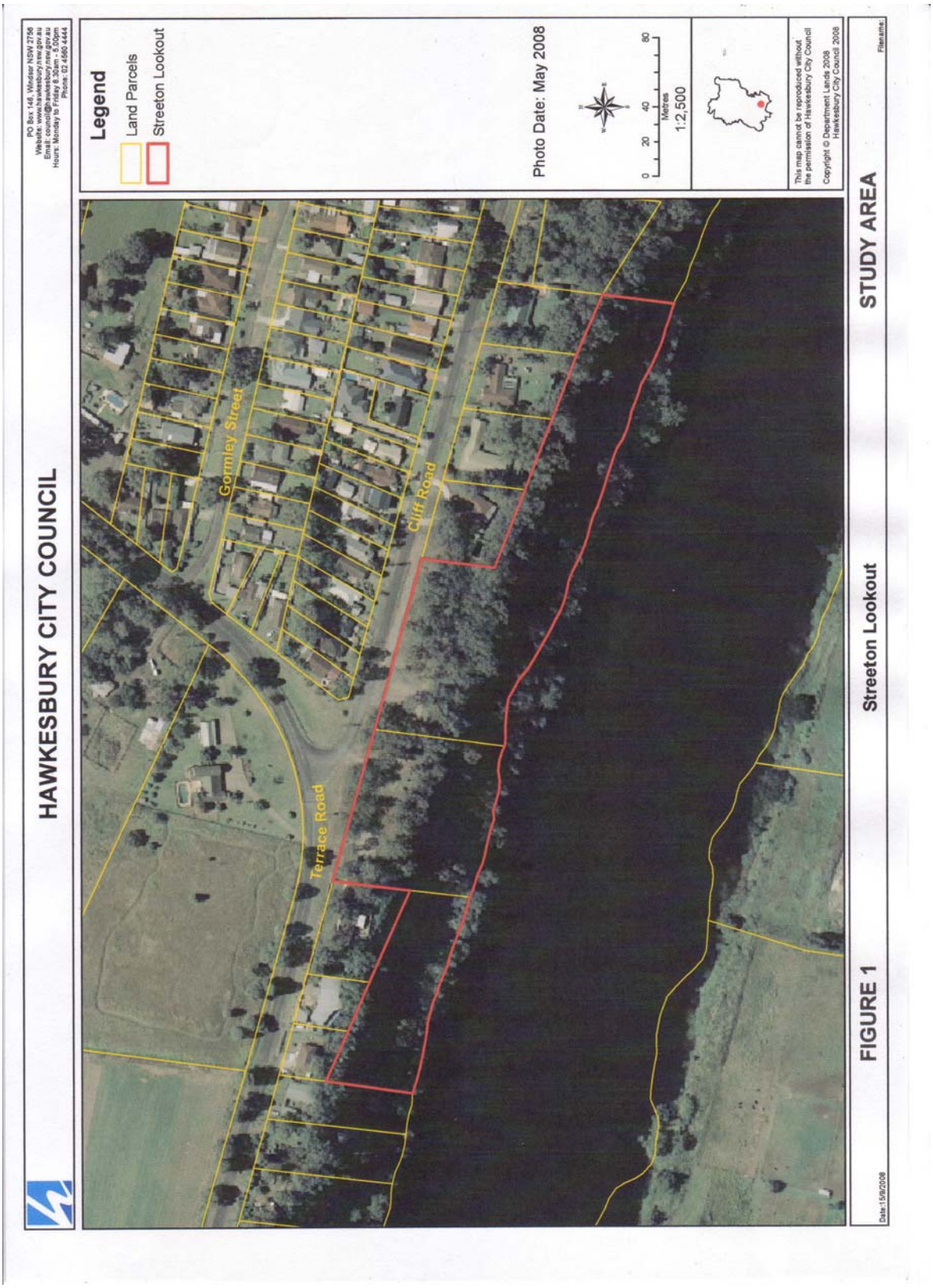
CPEECs	Cumberland Plain Endangered Ecological Communities
CPW	Cumberland Plain Woodland
DNR	NSW Department of Natural Resources
DofL	NSW Department of Lands
DofP	NSW Department of Planning
DECC	NSW Department of Environment & Climate Change
EPBC Act	Environment Protection & Biodiversity Conservation Act 1999
HRCC	Hawkesbury River County Council
HRFC	Hawkesbury Rural Fire Service
LEP	Hawkesbury City Local Environmental Plan 1989
LGA	Local Government Area (Hawkesbury City Council)
NPWS	NSW National Parks & Wildlife Service
NSWRFS	New South Wales Rural Fire Services
RFEF	River-flat Eucalypt Forest
SREP	Sydney Regional Environmental Plan
SSTF	Shale Sandstone Transition Forest
TSC Act	Threatened Species Conservation Act 1995
WSDR	Western Sydney Dry Rainforest

1.2 STUDY AREA

1.2.1 LOCATION AND CONTEXT

This plan of management applies to Streeton Lookout, Freeman's Reach. The public reserve, covering an area of almost 2.6 hectares (Ha), is classified as community land. Streeton Lookout is located within the riparian corridor of the Hawkesbury River and includes the riverbank (lower level), steep slope/ escarpment and flat land (upper level). The central upper portion of the reserve adjoins Terrace Road and Cliff Road, Freeman's Reach. Only the upper elevated portion of the reserve (the lookout) is readily accessible to the public. The reserve shares a common boundary with a number of small residential lots. The surrounding land use beyond the residential precinct is rural/ agricultural (refer to *Figure 1: Study Area).*

Streeton Lookout offers an outstanding range of natural, scenic, Aboriginal, cultural, social and recreational values. It is a popular passive recreational destination for both local and regional visitors to the Hawkesbury Valley. The reserve is defined by its natural scarp and bushland setting which includes endangered ecological communities. The lookout offers magnificent views over the Hawkesbury River, surrounding rural country-side and the Blue Mountains.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Legend
Land Parcels
Streeton Lookout
Photo Date: May 2008
0 20 40 80
Metres
1:2,500
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Gormley Street
Cliff Road
Terrace Road
FIGURE 1
Streeton Lookout
STUDY AREA
Date:15/9/2008
Filename:

Streeton Lookout provides easy visitor access with a basic range of facilities including off-street car parking, picnic tables, litter bins and public amenities. The lookout is an important part of the "Hawkesbury Artist's Trail – In the Steps of the Masters". Previously known as Terrace Park, the reserve was re-named in recent years after the artist Arthur Streeton. His world famous painting – *"The purple noon's transparent might"* was painted on the terrace near this lookout in 1896. The reserve has a sign describing the painting. The view is still very much as it was when painted by Streeton.

Streeton Lookout is believed to have significance in terms of Aboriginal archaeological and cultural heritage as a natural resources site (eg. silcrete deposits utilized by the Darug people (Boorooborongal Clan) *(pers. comm. Watson, L. DCAC, 2008).* During preparation of this plan of management an issue was raised that Streeton Lookout may have been the site of the first Aboriginal 'mission' or 'institute' in the area *(pers. comm. Dyer, D., 2008).* Further investigation has not found any evidence to support this statement (refer to discussion in *3.4 Cultural Heritage*).

1.3 LAND DESCRIPTION

1.3.1 LAND TENURE

Streeton Lookout, Freeman's Reach, is located within the Parish of Currency, County of Cook, City of Hawkesbury. The public reserve is comprised of three parcels of land, all of which are classified as community land and owned in fee simple by Hawkesbury City Council. The three community land parcels include the following (refer to *Figure 2: Land Tenure*):

- Lot 2 in DP 212263
- Lot 5 in DP 714990
- Lot 4 in DP 547120

It is believed that Streeton Lookout was created following the subdivision of 'Coriadale' in the 1950s and the Gormley Street/ Cliff Road subdivision of the 1960s *(community workshop, 2008).*

1.3.2 EXISTING FACILITIES AND IMPROVEMENTS

Table 1: Land Description – Existing Facilities & Improvements is divided into four separate columns with the following information provided for each land parcel:

- Lot/ DP number (column 1);
- proposed community land category (column 2);
- description of land parcel, facilities and improvements (column 3);
- condition of facilities and improvements (column 4).

Lot/ DP number
Lot and DP number provide land tenure information for the land parcel according to Hawkesbury City Council's property records.

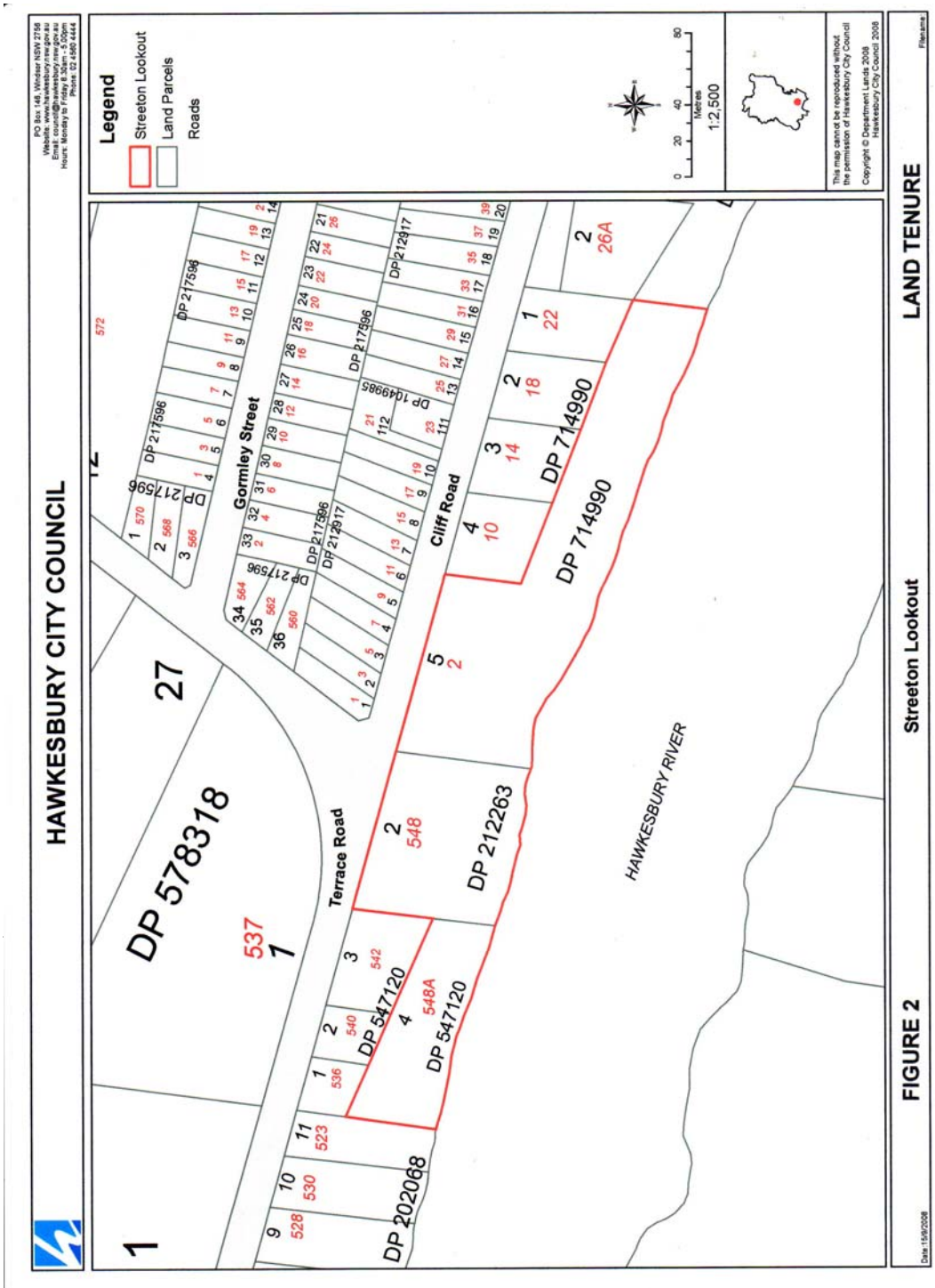
Community land category
The proposed community land category is shown in this column (refer to *1.5 Community Land Categorisation*).

Land description, facilities and improvements
This column provides a brief description of the land parcel, including facilities and improvements, landscape embellishment and the presence of native vegetation and/ or exotic weeds. An indication of land management regimes (eg. mowing and general maintenance) is also provided.

Condition
This column refers to the general condition of facilities and improvements in accordance with the requirements of the *Local Government Act 1993*. The assessment of condition follows directly from the description of facilities and improvements (ie. same line) and provides a broad indicator of overall condition of these described items as follows:-

good	described items are in relatively good condition and repair under the current works and maintenance program.
fair	described items are in only fair condition and in need of repair/ improvements or an increased level of maintenance.
poor	described items are in poor condition requiring repair in some instances, improvements or an increased level of maintenance
poor*	items requiring urgent attention (public safety/ risk management issues).

The condition assessment refers primarily to built facilities and improvements. For further issues in relation to facilities/ condition, refer to *2.0 Community Consultation*. Refer to *3.0 Basis for Management* for a detailed description of environmental condition and status of natural areas and *4.0 Management Strategies* for proposed capital works, maintenance and management with respect to all items.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Legend
Streeton Lookout
Land Parcels
Roads
0 20 40 80
Metres
1:2,500
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FIGURE 2
Streeton Lookout
LAND TENURE
Date: 15/6/2008
Filename:
DP 578318
537
1
27
1
Terrace Road
Gormley Street
Cliff Road
DP 217596
DP 212917
DP 104998S
DP 714990
DP 212263
DP 547120
DP 202068
HAWKESBURY RIVER

TABLE 1: LAND DESCRIPTION EXISTING FACILITIES AND IMPROVEMENTS

Land Description	Community Land Category	Existing Facilities/ Improvements	Condition
Lot 2 DP 212263	Park:	picnic area/ lookout (upper flat area)	
		gravel vehicular access/ parking [unsealed]	fair
		log vehicular barriers	fair
		log post and rail barriers/ bollards	poor
		concrete pedestrian pathways	fair
		metal litter bin [1 No.]	good
		power poles/ irrigation meter boxes [locked]	good
		amenities building [septic system]	
		brick building/ metal roof w. tiled floors [incl. store-room/ meter boxes]	good
		painted mural on western wall	good
		remnant woodland	
		native bushland [canopy trees/ regrowth]	varies
		exotic weeds [dom. understorey]	poor
	Natural area: bushland	picnic area/ lookout (upper flat area)	
		gravel vehicular turning area/ parking [unsealed]	fair
		unmade vehicular track/ parking	poor
		log vehicular barriers	fair
		log post and rail barriers/ bollards	poor
		timber slat/ metal frame picnic tables/ seating on conc. bases [6 No.]	fair
		reserve signage [incl. Artists Trail]	good
		remnant woodland	
		native bushland [canopy trees/ regrowth]	varies
		exotic weeds [dom. understorey]	poor
	Natural area: escarpment	safety fencing [top of escarpment]	
		1.2m high chain-wire safety fence [this section of reserve only]	fair
		irrigation maintenance/ access to lower level	
		restricted access w. chain-wire security fence/ barbed wire & locked gate (vandalised)	poor*
		conc. steps/ steel ladder [on cliff-face]	poor*
		above ground irrigation pipe-work/ cables	poor
		remnant native bushland [canopy cleared]	varies
		exotic weeds [dom. understorey]	poor
	Natural area: watercourse	vegetated riverbank [lower level]	
		native riparian vegetation/ regrowth	varies
		unmade walking track	poor
		exotic weeds	poor
		irrigation pumps	good
Lot 5 DP 714990	Park:	lookout (upper flat area adjoining picnic area)	
		gravel vehicular access/ parking [unsealed] and large turning area	poor
	Natural area: bushland	lookout (upper flat area adjoining picnic area)	
		unmade pedestrian/ BMX tracks	poor
		no other facilities or improvements	
		native bushland [canopy trees/ regrowth]	varies
		exotic weeds [dom. understorey]	poor
	Natural area: escarpment	no safety fencing [adjoining upper flat area]	
		native bushland [canopy partially cleared]	varies
		exotic weeds [dom. understorey]	poor

Land Description	Community Land Category	Existing Facilities/ Improvements	Condition
continued			
Lot 5 DP 714990	Natural area: watercourse	vegetated riverbank [lower level] native riparian vegetation/ regrowth exotic weeds	 varies poor
Lot 4 DP 547120	Natural area: escarpment	escarpment (west of picnic area) native bushland exotic weeds	 varies poor

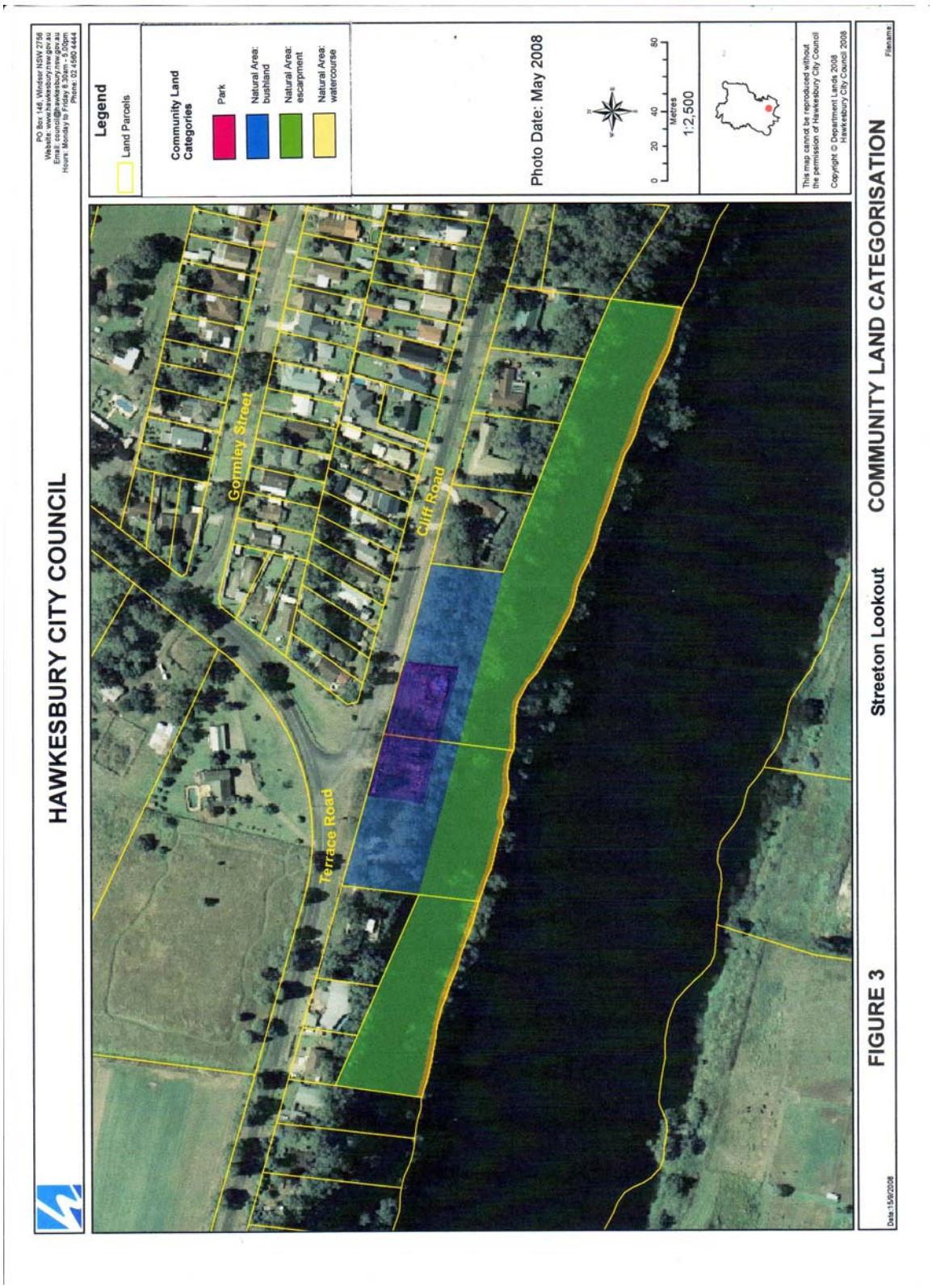
1.4 COMMUNITY LAND MANAGEMENT

Community land must be managed in accordance with the *Local Government Act 1993* and other relevant legislation and policies. The ways in which community land can be used and managed are strictly governed in accordance with an adopted plan of management and any law permitting the use of the land for a specified purpose or otherwise regulating its use. The nature and use of community land may not change without an adopted plan of management. Community land must not be sold, exchanged or otherwise disposed of except in the instance of enabling the land to be added to Crown reserve or a protected area under the *National Parks and Wildlife Act 1974*. The use and management of community land must also be consistent with its designated categories and core objectives.

1.5 COMMUNITY LAND CATEGORISATION

1.5.1 CATEGORISATION

In accordance with the *Local Government Act 1993* all community land must be categorised as either a natural area, a sportsground, a park, an area of cultural significance or for general community use, or a combination of these categories. A further requirement is that land categorised as a "natural area" must be given a sub-category of either bushland, wetland, escarpment, watercourse, foreshore or a category prescribed by the regulations.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Phone: 02 4560 4444
Legend
Land Parcels
Community Land Categories
Park
Natural Area: bushland
Natural Area: escarpment
Natural Area: watercourse
Photo Date: May 2008
0 20 40 80
Metres
1:2,500
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Gormley Street
Cliff Road
Terrace Road
FIGURE 3
Streeton Lookout
COMMUNITY LAND CATEGORISATION
Date:15/6/2008
Filename:

This plan of management categorises Streeton Lookout into the following (see *Figure 3: Community Land Categorisation*):

- Park
- Natural area – bushland
- Natural area – escarpment
- Natural area – watercourse

The community land categorisation for Streeton Lookout, as identified in this plan of management, is in accordance with the guidelines of the *Local Government (General) Regulation 2005* and supersedes categories identified in the *Draft Hawkesbury Generic Plans of Management 2003* and previous draft mapping of categories (Note: The category of 'Park' has been split within the upper flat level to include 'Natural area – bushland'.

Park

"Land should be categorised as a park under s.36(4) of the Act if the land is, or is proposed to be, improved by landscaping, gardens or the provision of non-sporting equipment and facilities, for use mainly for passive or active recreational, social, educational and cultural pursuits that do not unduly intrude on the peaceful enjoyment of the land by others".

Section 104, Local Government (General) Regulation 2005

The central upper flat area (including designated car parking, picnic area and public amenities) is categorised as 'Park' in accordance with its modified landscape character.

Natural Area

"Land should be categorised as a natural area under s.36(4) of the Act if the land, whether or not in an undisturbed state, possesses a significant geological feature, geomorphological feature, landform, representative system or other natural feature or attribute that would be sufficient to further categorise the land as bushland, wetland, escarpment, watercourse or foreshore under section 36(5) of the Act".

Section 102, Local Government (General) Regulation 2005

Natural Area – bushland

"(1) Land that is categorised as a natural area should be further categorised as bushland under s.36(5) of the Act if the land contains primarily native vegetation and that vegetation:

(a) is the natural vegetation or a remainder of the natural vegetation of the land, or
(b) although not the natural vegetation of the land, is still representative of the structure or floristics, of the natural vegetation in the locality.

(2) Such land includes:

(a) bushland that is mostly undisturbed with a good mix of tree ages, and natural regeneration, where the understorey is comprised of native grasses and herbs or

native shrubs, and which contains a range of habitats for native fauna (such as logs, shrubs, tree hollows and leaf litter), or

(b) moderately disturbed bushland with some regeneration of trees and shrubs, where there may be a regrowth area with trees of even age, where native shrubs and grasses are present in the understorey even though there may be some weed invasion, or

(c) highly disturbed bushland where the native understorey has been removed, where there may be significant weed invasion and where dead and dying trees are present, where there is no natural regeneration of trees or shrubs, but where the land is still capable of being rehabilitated".

Section 107, Local Government (General) Regulation 2005

The balance of the upper flat area is categorised as natural area – bushland. This area retains a more or less contiguous open woodland of native canopy species typical of Cumberland Plain Woodland (CPW). These canopy species are of varying condition and health with many specimens displaying some degree of decline and crown die-back. The average age structure is up to 25-40 years+ with some old growth specimens present. Although the native shrub understorey is virtually absent, this woodland supports a range of native grasses/ groundcovers in the ground stratum.

Natural Area – escarpment

"Land that is categorised as a natural area should be further categorised as an escarpment under s.36(5) of the Act if:

(a) the land includes such features as a long cliff-like ridge or rock, and

(b) the land includes significant or unusual geological, geomorphological or scenic qualities".

Section 109, Local Government (General) Regulation 2005

This category refers to the natural scarp/ steep embankment which separates the upper flat terrace and the riverbank below (approximately 40 metres difference in elevation from top of escarpment to river bank). This natural feature defines the visual and scenic character of the reserve. Although much of the native canopy has been removed adjacent to the lookout/ picnic area, the escarpment still retains understorey components of Western Sydney Dry Rainforest (WSDR), albeit highly modified by past clearing and weed invasion. The eastern and western sections of the escarpment, adjoining the rear boundaries of residential properties, retain a more or less intact Shale Sandstone Transition Forest (SSTF) community.

Natural Area – watercourse

"Land that is categorised as a natural area should be further categorised as a watercourse under s.36(5) of the Act if the land includes:

(a) any stream of water, whether perennial or intermittent, flowing in a natural channel, or in a natural channel that has been artificially improved, or in an artificial channel that has changed the course of the stream of water, and any other stream of water into or from which the stream of water flows, and
(b) associated riparian land or vegetation, including land that is protected land for the purposes of the *Rivers and Foreshores Improvement Act 1948* or State protected land identified in an order under section 7 of the *Native Vegetation Conservation Act 1997"*.

Section 110, Local Government (General) Regulation 2005

The riparian zone along the river bank (lower level) is categorised as natural area – watercourse. This category includes fragmented stands/ regrowth of River-flat Eucalypt Forest (eg. River Oaks) and extensive weed growth.

1.5.2 SIGNIFICANCE OF RESERVE'S NATURAL AREAS

Cumberland Plain Woodland (CPW), Western Sydney Dry Rainforest (WSDR), Shale Sandstone Transition Forest (SSTF) and River-flat Eucalypt Forest (RFEF) all have high conservation values and are listed as endangered ecological communities (TSC Act 1995). These natural heritage values need to be properly protected and managed. All of these areas however are threatened by a range of ongoing management issues including clearing, weed invasion, dumping, vandalism, fire and recreational impacts. These natural areas would respond to a coordinated bush regeneration and restoration program.

In accordance with the *Local Government Act 1993* the management of each category and sub-category is guided by a set of core objectives. The reserve's natural area categories have specific requirements in terms of permissible development, leases and licences. Furthermore, the presence of endangered ecological communities (TSC Act 1995) within the reserve signals the need for establishing an appropriate conservation and management strategy (see *1.7 Other Relevant Legislation and Policies: Threatened Species Legislation*).

1.6 LEASES, LICENCES OR OTHER ESTATE

1.6.1 GENERAL

There are no current leases or licences over this community land. A lease, licence or other estate may be granted, in accordance with an express authorisation by this plan of management, providing the lease, licence or other estate is for a purpose prescribed in s.46 of the *Local Government Act 1993.* The purpose must be consistent with core objectives for the category of community land (refer to *4.0 Management Strategies - Table 4: Schedule of*

Core Objectives). For express authorisation of future permitted leases, licences or other estate refer to *Table 5: items A6-A8*.

Council must not grant a lease, licence or other estate for a period (including any period for which the lease could be renewed by the exercise of an option) exceeding 21 years. A lease, licence or other estate may be granted only by tender in accordance with s.46A of the *Local Government Act 1993* and cannot exceed a term of 5 years (including any period for which the lease could be renewed by the exercise of an option), unless it satisfies the requirements as scheduled in s.47, or is otherwise granted to a non-profit organisation (refer to *Leases, licences and other estate in respect of community land – s.46, 46A, 47 and 47A Local Government Act 1993).*

1.6.2 LEASES, LICENCES & OTHER ESTATE IN RESPECT OF NATURAL AREAS

In accordance with *s.47B Local Government Act 1993,* leases, licences or other estate must not be granted in respect of land categorised as a natural area:

(a) to authorise the erection or use of a building or structure that is not prescribed under sub-section 47B (a) (including re-building or replacement). The prescribed buildings or structures include walkways, pathways, bridges, causeways, observation platforms and signs.

(b) to authorise the erection or use of a building or structure that is not for a purpose prescribed under sub-section 47B (b). The prescribed purposes include information kiosks, refreshment kiosks (but not restaurants), work sheds or storage sheds required in connection with the maintenance of the land and toilets or rest rooms.

1.7 OTHER RELEVANT LEGISLATION & POLICIES

1.7.1 OVERVIEW

In addition to the requirements of the *Local Government Act 1993* this plan of management has been prepared in accordance with the provisions contained in other relevant legislation and policy guidelines, including but not limited to the following:-

- Native Title Act (Commonwealth) 1993
- Rivers and Foreshores Improvement Act 1948
- Catchment Management Authorities Act 2003
- Native Vegetation Conservation Act 2003
- Environment Protection and Biodiversity Conservation Act 1999
- Threatened Species Conservation Act 1995

- Fisheries Management Act 1994
- National Parks and Wildlife Act 1974
- NSW Heritage Act 1977
- Noxious Weeds Act 1993
- Rural Fires Act 1997
- Environmental Planning and Assessment Act 1979
- Disability Discrimination Act 1992
- SREP No. 20 Hawkesbury-Nepean River (No.2 – 1997)
- SEPP 19: Bushland in Urban Areas
- Hawkesbury Lower Nepean Catchment Blueprint 2003
- Hawkesbury Nepean Floodplain Management Strategy 1998
- NSW Flood Policy 1984
- NSW State Rivers and Estuaries Policy 1993
- NSW Wetlands Management Policy 1996
- NSW Floodplain Management Manual 2001

- Hawkesbury City Council Management Plan 2006-2007
- Hawkesbury Local Environmental Plan 1989
- Section 94 Contributions Plan Review 2001
- Hawkesbury City Council Charter
- Hawkesbury Cultural Plan 2006-2011

Native Title Act (Commonwealth) 1993

This plan of management acknowledges the significance of the Hawkesbury River, and specifically the Freeman's Reach area, as a traditional resource area for the Darug people (Boorooborongal Clan). The preparation of this plan of management has pursued an open, transparent approach to community consultation including an open invitation to all the Darug Aboriginal groups. The plan of management encourages broader collaboration with traditional Aboriginal custodians in the future management of the reserve (refer to *4.0 Management Strategies: Table 5: items B1-B4*).

The general area is subject to Native Title Claim No: NC 97/8 by the applicant – Darug Aboriginal Corporation however it appears that there are no specific claims under the *Native Title Act (Commonwealth) 1993* affecting the reserve.

Rivers and Foreshores Improvements Act 1948

Streeton Lookout is subject to the provisions of the *Rivers and Foreshores Improvements Act 1948*. This Act provides broad regulatory control over activities within the riparian corridor (ie. "protected lands" as defined in the Act) including the following:-

(a) making an excavation on, in or under protected land;
(b) removal of material from protected land; or
(c) works which obstruct or detrimentally affect the flow of protected waters, or which are likely to do so.

Protected land is defined under the *Rivers and Foreshores Improvements Act 1948* as:-

(a) land that is the bank, shore or bed of protected waters (ie. named and identified watercourses); or
(b) land that is not more than 40 metres from the top of the bank or shore of protected waters (measured horizontally from the top of the bank or shore); or
(c) material at any time deposited, naturally or otherwise and whether or not in layers, on or under land referred to in the above description.

Native Vegetation Conservation Act 2003

The *Native Vegetation Conservation Act 2003* applies to State Protected Land within the Hawkesbury City LGA. Such land is defined as being "within 20 metres of the bank or within the bed of a prescribed stream or lake, land mapped as having a slope in excess of 18 degrees, land mapped as environmentally sensitive or land subject to siltation or erosion" (ie. the Hawkesbury River and its tributaries in this catchment).

The NVC Act applies to this reserve and it is important that the riparian corridor is managed in a way which provides consistency with the following objectives of the Act:-

(a) to provide for the conservation and management of native vegetation on a regional basis;
(b) to encourage and promote native vegetation management in the social, economic and environmental interests of the State;
(c) to protect native vegetation of high conservation value;
(d) to improve the condition of existing native vegetation;
(e) to encourage the revegetation of land and the rehabilitation of land with appropriate native vegetation;
(f) to prevent the inappropriate clearing of vegetation;
(g) to promote the significance of native vegetation in accordance with the principles of ecological sustainable development.

SREP No. 20 Hawkesbury-Nepean River (No.2 – 1997)

This reserve is subject to the provisions under *SREP No.20 Hawkesbury – Nepean River (No.2 – 1997)* which controls any development which has the potential to impact on the river environment (ie. water quality, environmentally sensitive areas and riverine scenic quality).

Environmental Planning and Assessment Act 1979

The *Environmental Planning and Assessment Act 1979* forms the basis of statutory planning in New South Wales, including the preparation of Local Environmental Plans (LEPs) which regulate land use and development. Hawkesbury City Council, as the consent authority under the *Local Environmental Plan 1989 (LEP 1989)* and the *Environmental Planning and Assessment Act 1979* controls development and the use of land on parks and reserves in the Hawkesbury City Council local government area.

Streeton Lookout is zoned *7. Environmental Protection – Agriculture Protection* (subject to Clause 11(2) – subdivisions) under *Hawkesbury City Council Local Environmental Plan* (LEP 1989). It is desirable that zoning is consistent with this plan of management.

Threatened species legislation

Streeton Lookout retains four endangered ecological communities scheduled under Part 3 of Schedule 1 of the *Threatened Species Conservation (TSC) Act 1995.* For details of these communities refer to *3.0 Basis for Management*. The TSC Act provides the legislative mechanisms for dealing with listed items. When endangered species, populations or ecological communities are scheduled under the TSC Act, the following legal responses are triggered:-

(a) land can be declared as "critical habitat"; or
(b) a "recovery plan" must be prepared; and where key threatening processes have been identified under Schedule 3
(c) a "threat abatement plan" must be prepared.

To provide consistency with threatened species legislation this plan of management aims to address the following:-

- the plan must state whether the land has been declared as "critical habitat" or affected by a "recovery plan(s)" or "threat abatement plan";
- must have consistency in the management objectives of the land and the *Threatened Species Conservation Act* or the *Fisheries Management Act*;
- the draft plan must be forwarded to the Director General of National Parks and Wildlife or the Director of NSW Fisheries and must incorporate any requirements made by either person;
- no change in the use of the land is permitted until a plan of management has been adopted that meets the above requirements;
- no lease or licence can be granted until a plan of management is in place – (leases and/or licences that are in place before the land was affected by threatened species laws can continue to operate);
- no native plant species of an endangered ecological community may be "picked" without the prior granting of a Section 91 Licence under the TSC Act 1995.

No part of this community land has been declared as "critical habitat" nor is it currently affected by a "recovery plan" or "threat abatement plan". The NSW Department of Environment & Climate Change (DECC) is currently developing a Draft Recovery Plan for all of the Cumberland Plain Endangered Ecological Communities (CPEECs).

2.0 COMMUNITY CONSULTATION

2.1 INTRODUCTION

2.1.1 PREPARING THE DRAFT PLAN OF MANAGEMENT

Community consultation has been a key component in the preparation of this plan of management. Hawkesbury City Council has promoted an open, transparent approach to community consultation, providing opportunities for stakeholders and members of the community to contribute comments and submissions or to discuss specific issues.

A community workshop was held during preparation of the draft plan of management (refer to *2.2 Community Workshop*). Further consultation continued through to release of the draft plan of management (ie. public exhibition), at which time the community was able to make final comments and submissions. This process highlights the importance of community involvement and ownership in the adopted plan of management.

2.1.2 PUBLIC EXHIBITION AND REVIEW

In accordance with the *Local Government Act 1993* the draft plan of management must be placed on public exhibition for a period of at least 28 days (ie. four weeks). A further two weeks are provided for completion of written submissions. During the public exhibition period the draft plan of management will be available for viewing at the Hawkesbury City Council Administrative Offices, Hawkesbury Central Library (in the Deerubbin Centre), Windsor and on Council's web-site http://www.hawkesbury.nsw.gov.au/

All public submissions and any comments submitted by other government agencies will be reviewed by Hawkesbury City Council. The draft plan of management, as amended following public submissions and review, will be submitted to Council for adoption.

2.2 COMMUNITY WORKSHOP

2.2.1 PROCEEDINGS

A community workshop was held at the Tebbutt Room, Deerubbin Centre, 300 George Street, Windsor at 6:30pm on Thursday 16th October 2008. The workshop was advertised by Hawkesbury City Council in the local press and notices in Council's Administrative Offices and Hawkesbury Central Library. Council also sent letters to surrounding local residents.

Apart from Councillors, council staff and individual participants, the key stakeholder groups contacted for the workshop included the following (in alphabetical order):

- Darug Custodian Aboriginal Corporation
- Darug Tribal Aboriginal Corporation
- Dept. of Environment & Climate Change (DECC) – Richmond Office
- Hawkesbury District Rural Fire Service
- local residents
- local tour operators

A total of twenty-one (21) people attended the workshop. Most of the people in attendance were local residents from Freeman's Reach. The workshop proceeded with a brief description of the plan of management process and a short power-point presentation by Noel Ruting, a Director of LandArc Pty Limited (see *Appendix I: Community Consultation – presentation material and submissions*). This presentation was followed by a discussion of key issues by workshop participants.

A Community Issues Questionnaire (pro-forma – refer to *Appendix I)* was distributed to stakeholders at the workshop. Additional questionnaires were mailed out after the workshop. A total of ten (10) written responses were received from attendees. The issues are summarized in the following section (*2.3 Key Issues*).

2.2.2 FURTHER SUBMISSIONS

One written submission was received from the Darug Custodian Aboriginal Corporation in reference to 'Future Management of Reserves in the Hawkesbury' and in particular, the preparation of plans of management for Ham Common and Streeton Lookout. This submission flagged the need to survey these two reserves, to investigate potential Aboriginal cultural heritage sites and to ensure appropriate protection, management and education including signage. The submission noted the potential significance of Streeton Lookout as an important natural resources site for the Darug people.

2.3 KEY ISSUES

2.3.1 SUMMARY

Key issues identified in Council's brief, the community workshop presentation, discussion by participants, written responses and submission include the following:

- visual/ scenic and aesthetic quality of reserve;
- general maintenance/ repairs and rubbish collection;
- vehicular access and parking;
- visitor access and public safety;
- irrigation infrastructure;
- provision and enhancement of recreational facilities;
- environmental protection and management;
- protection of potential Aboriginal cultural heritage.

A summary of community and stakeholder issues has been compiled (for further detailed analysis and review see the relevant sections as indicated):

1. NATURAL AND CULTURAL ENVIRONMENT
(refer to *3.0 Basis for Management – 3.3 Natural and Cultural Setting, 3.4 Cultural Heritage & 3.5 Environment and Biodiversity*):

Natural setting:

- ❖ significance of natural riparian corridor/ riverine context, reserve's scenic qualities, bushland character and biodiversity;
- ❖ varying topography and accessibility – flat (upper level – lookout/ picnic area), escarpment and riverbank (lower level)..

Community values:

- ❖ reserve's values described by workshop participants as:
  - 'unique combination of Blue Mountains, Hawkesbury lowlands and river vistas';
  - 'stunning views';
  - 'the serenity and bird life';
  - 'a magnet for local, state and interstate visitors';
  - 'connection with Streeton and Artists Trail';
  - 'only open space/ park for my children to play at within walking distance';
  - 'low key' and 'rustic' character
  - 'family recreation' 'a place for children to play and ride bikes';
  - 'safety for all users especially children';

- 'kids make their own fun' rather than needing 'installed play equipment';
- shared preference for simplicity rather than over development of reserve.

Aboriginal, archaeological and cultural heritage

- ❖ need for appropriate consultation with local Aboriginal elders and further investigation and protection of Aboriginal archaeological and cultural heritage (eg. silcrete deposits);
- ❖ cultural heritage values associated with Arthur Streeton (lookout is part of the Hawkesbury Artists Trail)/ site where "The Purple Noon's Transparent Might" (1896) was painted is now inaccessible at the Terrace Road end of Wire Lane.

Natural environment and biodiversity:

- ❖ significance of endangered ecological communities, existing degraded condition/ status and current impacts (weed invasion, dumping, clearing, multiple tracking, soil compaction, crown die-back, broad-scale mowing, etc);
- ❖ protection of biodiversity and habitat values (eg. Fairy Wrens) and potential for bird-watching and environmental education.

Environmental management:

- ❖ lack of overall maintenance, build-up of unsightly rubbish, soil dumping/ construction of BMX jumps and vandalism;
- ❖ dumping of garden refuse is a major concern/ continuing source of weeds in reserve and significant impact on natural areas;
- ❖ need for weed management/ bush regeneration and restoration strategies (including establishing priority areas, management zones, suitable planting stock, bank stabilization, protective devices, visitor education, etc);
- ❖ improve management of high impact recreational uses;
- ❖ potential impact of restoration strategy on lookout's scenic qualities (ie. view corridors) and need for appropriate management;
- ❖ Greening Australia planted a lot of generic native trees in reserve (during the 1980s)/ only two struggling saplings remaining;
- ❖ considerable interest in volunteer Bushcare program/ potential Federal grant funding (no current weed management/ bush regeneration in reserve);
- ❖ existing irrigation pumps, pipelines and meter boxes within reserve – historic use, public safety, vandalism, maintenance, visual impacts, rationalization and consolidation options (Note: specific requirements of LGA Act;

- ❖ climate change and potential impacts on reserve management (increased periods of drought/ increased risk of bush fire hazard, water quality issues and impacts on habitat values/ biodiversity).

2. PUBLIC ACCESS, RECREATION AND PUBLIC SAFETY ISSUES
(see *3.0 Basis for Management – 3.6 Recreation, access and social values*):

Site maintenance:

- ❖ many local residents believe lack of maintenance is the key issue affecting quality and use of the reserve (lookout);
- ❖ reserve variously described by workshop participants as:
  - 'very unattractive for visitors'
  - 'park has so much potential'
  - 'park going to waste'
  - 'disgusting'
  - 'ashamed about lack of facilities and condition'
  - 'trash all over the place/ bins don't get emptied'
  - 'disheartening to see reserve go to pot over the years'
  - 'need a more pleasant environment'
  - '[lookout] allowed to fall into an appalling state'
  - 'unkemptness of the area'.

Regional asset and site potential:

- ❖ outstanding views over Hawkesbury Valley;
- ❖ lookout should be considered a prime community asset with potential as a major destination for regional visitors;
- ❖ lookout should be promoted as a 'regional attractor' with 'directional signage at both ends of Terrace Road (particularly the North Richmond/ Bells Line)' [intersection].
- ❖ need for upgrading and enhancement of facilities 'to make it a worthwhile diversion [for visitors]';
- ❖ lookout is an important part of the Hawkesbury Artists Trail/ Hawkesbury Art Community 'paid $500.00 to fix the sign';
- ❖ connection with Arthur Streeton/ use the 'Streeton angle' to generate future funding;
- ❖ lookout was on the cover of Yellow Pages some years ago.

Visitor demand/ supply issues:

- ❖ lot of tour buses/ elderly people (popular stop-off point with easy access to lookout and toilets)/ popular with tour operators (good spot for morning tea);
- ❖ tour coaches from all over Australia/ up to 40-seat coaches;
- ❖ lookout also popular with independent travelers and a meeting place for events/ rallies (eg. automobile clubs, cyclists, etc);

- ❖ popular location for viewing cultural and natural events on flood-plain (eg. RAAF Richmond Base show described as 'standing room only', Hawkesbury Show fireworks, floods and bushfires;
- ❖ need for more shade and all-weather facilities, including paved area with seating to encourage people to stay longer.

Vehicular access and parking:

- ❖ uncontrolled vehicular movement and parking have created expansive areas of exposed topsoil/ potholes and erosion, compaction around tree roots and crown die-back;
- ❖ need to improve management and control of vehicular movement, parking and circulation within reserve:
  - local buses use unmade parallel dirt track (adjacent to sealed road) as lay-by and school bus stop;
  - large unrestricted turn around area (eastern side of amenities building)/ no need for such a large turning area;
  - log vehicular barriers/ bollards are in disrepair (some with exposed steel rods/ safety hazard);
  - need designated turning bay (drive in/ drive out) for tour coaches and larger vehicles (eg. pump out trucks/ septic system – see below);
  - need to clearly delineate reserve boundary to roadway and designated bus lay-by and turning area (large vehicles);
  - need quality vehicular barriers, road surfacing and re-turfing of open areas.
- ❖ parking area/ turning area (adjacent to fenced escarpment and amenities building) has large wash-away/ surface run-off directed over escarpment ('this will get bigger if left');
- ❖ reserve used for stockpiling of materials (eg. road maintenance);
- ❖ caravans use reserve to stay overnight and sometimes for a week (eastern end of reserve)/ lack of regulation and controls;
- ❖ late-night parking (no lighting);
- ❖ lack of maintenance attracting undesirable visitors.

Pedestrian access and circulation:

- ❖ improve pedestrian access, circulation and safety within reserve:
  - poor linkages between picnic facilities and toilet;
  - expansive areas of bare soil/ muddy after rain;
  - turfing some areas for appropriate passive recreation;
  - large ants nest directly in front of Streeton (Artists Trail) signage (visitors unknowingly stop to read sign while standing on ants nest);
  - poor access to viewing points;
  - maintain restricted access to steps/ ladder (irrigation pumps);
  - restrict access to escarpment (eastern end).

Public safety and risk management:

- public safety/ risk management issues – only half of the reserve (ie. picnic area) has been fenced off to restrict public access to the escarpment;
- security fencing/ locked gate at access point to irrigation pumps has been repeatedly vandalised (large section of chain-wire removed) allowing public access to upper steps/ ladder on cliff-face (Note: steps/ ladder and hand-rails are in disrepair);
- repair and/ or replace existing safety fence along top of escarpment (entire length of reserve);
- parents helped in building BMX track/ jumps in bushland (eastern end)/ need for more recreational opportunities for local children (eg. BMX bikes)/ reserve described as only place to play;
- support for retention of unstructured play opportunities such as the BMX track.

Irrigation infrastructure:

- visually intrusive nature of meter boxes/ power poles located in picnic area/ interruption of views over floodplain (re-location onto wall of amenities building suggested);
- alternate point of view that 'there is no problem' with irrigation equipment and boxes should be retained in situ (historical precedence/ part of rural activities 'farm-gate trail')/ no input / comments received from irrigators.

Recreational facilities:

- need to improve passive recreational infrastructure including:
  - designated car parking areas;
  - bus turning area (tour operators/ large vehicles);
  - upgraded public amenities (for larger groups);
  - pedestrian/ bike pathway linkages;
  - picnic shelter/ structure with picnic tables/ seating, gas BBQ facilities and paved area;
  - water-point/ bubbler and tap;
  - more litter bins;
  - identification and interpretive signage;
  - suitable landscaping and restoration planting.
- need for regular maintenance of picnic area, safety and security fencing/ gates, pathways, lookout/ viewing areas, removal of broken glass and rubbish collection/ lack of rubbish bins;
- public amenities are usually clean and well-maintained but need to be upgraded to accommodate large numbers of visitors for short periods (eg. tour coaches);
- pump truck turning area next to toilets (current septic system being replaced with sewer);

- suggestion to construct a viewing deck/ platform subject to geotechnical input/ feasibility (preliminary plan/ section provided);
- install signage identifying landmarks in panorama;
- install educational signage about the history and culture of the Darug people.

Future management and funding:

- need to improve sense of community ownership/ control and need for greater community involvement in maintaining reserve;
- suggestion to form 'Friends of Streeton Park';
- support for establishing local volunteer bush regeneration team (Bushcare program)/ seek grant funding to address weed issues;
- broad community interest in funding of general maintenance and future improvements – reserve has a poor history of funding for basic maintenance;
- need for greater commitment to regular maintenance;
- opportunity for lookout to be developed for local and regional visitors and contribute to revenue in the Hawkesbury Valley.

3.0 BASIS FOR MANAGEMENT

3.1 OBJECTIVES

This section of the plan of management has the following objectives:

- *to identify and assess key values associated with the community land;*
- *to define the community land's role within the local area and broader district context;*
- *to assess the impact of existing uses and management regimes or future development on identified key values;*
- *to establish the framework for sustainable management strategies consistent with community land objectives; and*
- *to provide a vision for the future of this community land.*

3.2 KEY VALUES AND SIGNIFICANCE

"Values" can be simply described as the things which make a place important. This values based approach establishes a desirable framework for managing community assets so that they may be better protected, maintained and where possible, restored and enhanced. The following key values have been developed through community consultation (refer to previous section) and further investigation, analysis and assessment. Key values are divided into four categories which form the basis for further discussion in this section as follows:

1. Natural and cultural setting
2. Indigenous and European cultural heritage
3. Environment and biodiversity
4. Recreational facilities, access and social values

Table 2: Values and Level of Significance assigns a significance ranking to values based on either a local/ district, regional or state level. Streeton Lookout offers outstanding scenic opportunities for regional visitors. The

stunning views from this vantage point are linked to important cultural heritage values. The reserve's recreational infrastructure however detracts from these regional values and opportunities.

The reserve's bushland offers important passive recreational opportunities at the local and regional levels. This bushland is comprised of four endangered ecological communities (TSC Act 1995) and provides vital habitat for a range of native species. In terms of scheduling under the TSC Act 1995, the reserve's biodiversity values are of regional and state significance.

TABLE 2: VALUES AND LEVEL OF SIGNIFICANCE

Key Values	Level of Significance		
	Local	Regional	State
Natural and cultural setting			
lookout/ vistas, escarpment & scenic quality		regional	
natural riparian corridor & bushland setting		regional	
Indigenous & European cultural heritage values			
Darug cultural heritage values – traditional resource area	subject to further investigation		
European – artist's trail		regional	
Environmental and biodiversity values			
endangered ecological communities			state
geodiversity – river floodplain, riparian context & escarpment		regional	
educational/ scientific values		regional	
Recreational facilities, access and social values			
passive recreation – picnic area, parking & public amenities	local	regional	
opportunities for enhanced public access to lookout/ escarpment	local	regional	
opportunities for enhanced educational/ interpretive facilities		regional	

Notes: Regional opportunities exist for passive/ cultural and nature-based recreation subject to further promotion of heritage values, natural area/ bushland restoration and improvements to passive recreational infrastructure.

PHOTO 1: South-western view over Hawkesbury River to Blue Mountains. Security/ safety fencing [foreground] (3.09.2008).

PHOTO 2: South-eastern view over Hawkesbury River floodplain/ Richmond Lowlands from the lookout (3.09.2008).

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PHOTO 3: View of picnic area/ natural setting (fragmented native woodland) looking west from amenities building (3.09.2008).

3.3 NATURAL & CULTURAL SETTING

3.3.1 LANDSCAPE CONTEXT

Streeton Lookout is predominantly a natural landscape – a small remnant parcel of bushland within a cultural landscape of agricultural and residential land uses. The reserve, located on an escarpment, overlooks the rural floodplain and Blue Mountains to the west. The reserve has three physical components:

1. flat upper level: providing public access, a lookout, recreational facilities and amenities within native woodland;
2. escarpment: inaccessible and only partially fenced off to the public; retaining remnant dry rainforest components and shale sandstone transition forest;
3. lower river bank (approx. 40 metres difference in elevation from top to river bank): inaccessible except by boat or ladder from reserve (no public access); largely cleared and weed infested.

The central, flat upper portion forms the main part of the reserve. It offers relatively easy off-street access with a picnic area, car parking and public amenities building within a bushland setting. The reserve shares a common boundary with adjoining private residences and includes the steep escarpment and river bank behind these properties. This land is not accessible to the public.

3.3.2 SIGNIFICANCE OF NATURAL SETTING

The reserve's natural environment has been largely disturbed, modified and neglected. Exotic weeds and grasses have invaded much of this landscape. Nevertheless, native woodland and transitional forest still dominate much of the upper terrace and adjoining slopes and this vegetation creates a distinctive sense of place for the reserve.

The remnant native vegetation consists of four endangered ecological communities, albeit highly fragmented and modified – Cumberland Plain Woodland (CPW), Western Sydney Dry Rainforest (WSDR), Shale Sandstone Transition Forest (SSTF) and River-flat Eucalypt Forest (RFEF). All of these communities are scheduled under the TSC Act 1995 and are of regional and State significance. These communities are considered vulnerable under current management practices. Refer to *3.5 Environment and Biodiversity*.

Furthermore, the more or less contiguous native vegetation along this portion of the escarpment and beyond the reserve's boundaries is significant in terms of enhanced regional habitat values and bio-linkages.

3.3.3 SCENIC & AESTHETIC VALUES

The dramatic escarpment, the river and floodplain (below) and distant mountains are natural features which define the visual and scenic character of the reserve. The lookout has outstanding 180 degree views to the south-east over the Richmond Lowlands and extending to the south-west over the Hawkesbury River and towards the Blue Mountains. The reserve's magnificent vistas are of regional significance with links to the famous artist, Arthur Streeton (refer to *3.4 Cultural Heritage*).

3.4 CULTURAL HERITAGE

3.4.1 INDIGENOUS & ARCHAEOLOGICAL VALUES

Significance of Deerubbin to the Darug people

The Hawkesbury River, originally known as "Deerubbin" (or "Venrubben") by the Darug Aboriginal people, and riparian corridor provided a vast range of resources for the Darug Aboriginal people. These resources included fresh water, opportunities for fishing, hunting and special plants for food, fibres, tools, bark canoe making, transportation and medicine. The area was inhabited by the Darug (including much of the greater Sydney area) and Darkinung people (northern Hawkesbury area to Hunter Valley). The main spoken language was Darug with many different dialects spoken by smaller groups or clans including the Boorooberongal, Caddie, Gomerigal, Kurrajong, Burramattagal, Warmuli and many others.

The first exploration party to the Hawkesbury area, led by Governor Phillip in 1789, found extensive evidence of Aboriginal occupation along the banks of the river including "hunting huts", bark canoes, marks on trees, possum traps and bird decoys *(Nichols, M., 2004, p.4* and *Penrith City e-history – Themes: The Early Land Alienation Pattern*).

Archaeological heritage

Archaeological research conducted within the Hawkesbury – Nepean catchment area has revealed a rich archaeological context. There are approximately 200 recorded Aboriginal sites in the Hawkesbury area *(Aboriginal Sites Register, Department of Environment & Climate Change).* It is believed however that this number may be as large as 4000 sites in the Hawkesbury LGA with more being discovered each year.

Although Streeton Lookout has no current record of archaeological relics or deposits (DECC) a submission by the Darug Custodian Aboriginal Corporation

(DCAC) noted its potential significance as a natural resources site, including silcrete deposits which were utilized by the Darug people (Boorooborongal Clan) *(pers. comm. Watson, L., DCAC. 2008).* Silcrete is a very hard and resistant material consisting mainly of silica. It was widely used by Aboriginal people for stone tool manufacture and valued as an important trade commodity. The combination of elevation above water and proximity to water are considered important factors influencing prehistoric Aboriginal site locations. Furthermore, investigations in western Sydney have confirmed that archaeological lithic assemblages (eg. whole or fragmentary stone artefacts) may be preserved in sub-surface layers even where there has been significant disturbance to the land surface *(McDonald, 2001).* This may have important implications for potential archaeological deposits within the reserve.

The DCAC submission identified the need for investigation to determine if any places, relics or potential archaeological deposits (PAD) exist within the reserve and if so, ensure that they are properly protected and managed. Under the *National Parks and Wildlife Act (1974)* and the *Heritage Act (1977)* all Aboriginal sites, whether recorded or not, are protected. This plan of management encourages a continuing consultative strategy to address these issues with the traditional Aboriginal custodians (refer to *4.0 Management Strategies, Table 5: items B1-B4).*

Aboriginal 'mission' and 'institute' – community workshop
The community workshop also raised the possibility that Streeton Lookout may have been the site of the first Aboriginal mission in the area (possibly as early as the 1790s) and known as the 'Aboriginal Institute' (Dyer, D., pers. comm. 2008). Reference was made to *Shut Out from the World – The Hawkesbury Aborigines Reserve and Mission 1889-1946* (Brook, J., 1994). Further investigation including a discussion with the author however has provided no evidence to support this statement.

It appears that a reference to an experiment by Governor Macquarie in 1814 to establish the 'Black Native Institution of New South Wales' – a school for Aboriginal children located in Parramatta (Brook, J., p.2, 1994) may have raised the current issue. By the mid-nineteenth century the Darug people had been reduced to a few concentrated groups located at La Perouse, Sackville Reach, Holdsworthy and beside the Richmond Road, Plumpton near Blacktown (Brook, J., p.11, 1994). In 1889 two Aboriginal reserves were proclaimed on Cumberland Reach and Kent Reach. The larger reserve was known as Sackville Reach Aborigines Reserve (Nichols, M., p.5, 2004). Freemans Reach, as an early site for an Aboriginal 'mission' or 'institute', is not mentioned in any of these studies. Further archival research with State records or the Mitchell Library may be required.

PHOTO 4: The stunning scenic vistas are of regional significance. Arthur Streeton painted this view in the summer of 1896 (3.09.2008).

PHOTO 5: Further investigation is needed to determine Aboriginal/ archaeological significance as a natural resources site (3.09.2008).

PHOTO 6: Painted mural on western wall of amenities building created by local artists during Youth Week '93 (3.09.2008).

3.4.2 LOCAL HISTORIC VALUES

Arthur Streeton and "The Purple Noon's Transparent Might"
The reserve, previously known as Terrace Park, was re-named in recent years after the artist Arthur Streeton. His world famous painting – *"The purple noon's transparent might"* (now hanging in the National Gallery of Victoria) was painted in 1896.

The actual location for the painting was at the Terrace Road end of Wire Lane (to the west) which is now inaccessible to the public. Although not the exact location, the view from Streeton Lookout is very similar to that painted by Streeton. The reserve is part of the "Hawkesbury Artist's Trail – In the Steps of the Masters" and has a sign describing the painting. This valuable regional tourism initiative highlights the cultural heritage values associated with Arthur Streeton.

Notably, this magnificent vista over the Hawkesbury River with the Blue Mountains in the distance, remains essentially as it was at the end of the nineteenth century.

It is important to recognize the significance of the lookout as a vital part of the Hawkesbury Artist's Trail and to develop the reserve's potential as a regional tourism attractor. These issues are discussed in *2.3 Key Issues* and *3.6 Recreation, access and social values.*

PHOTO 7: Hawkesbury Artist's Trail signage describing Arthur Streeton's world famous painting *"The purple noon's transparent might"* (3.09.2008).

Local artists and mural
The western wall of the amenities building has a large mural which was painted by a local artists' co-operative for Youth Week (1993). This feature adds to the reserve's local character.

3.5 ENVIRONMENT & BIODIVERSITY

3.5.1 CLIMATE CHANGE

The Hawkesbury River Valley has a warm temperate climate (ie. summer and winter season). Rain may occur at any time throughout the year. Rainfall records have been taken by the Bureau of Meteorology at RAAF Base Richmond since 1993 (closest recording site). Over this period the lowest and highest annual rainfall has varied between 490mm (2006) to 1051mm (2007).

The Hawkesbury-Nepean River catchment has recorded significant changing rainfall patterns, oscillating between periods of high and low rainfall *(LandArc, 2007).* Climate change is tending to exacerbate these weather extremes, further affecting flood and drought regimes. Human release of greenhouse gases into the atmosphere has caused, and will continue to cause, global warming for many decades (*IPCC Assessment Report, 2007*). For New South Wales each decade since 1950 has recorded a 0.15°C increase in annual mean maximum temperature and a 14.3mm decrease in annual rainfall (*Water Information System for the Environment, DECC, 2007).*

The latest CSIRO modelling confirms that our climate will continue to change over coming decades producing a range of impacts including the following:

- increased risk of drought
- increased soil erosion and dry land salinity
- more hot days
- greater bushfire risk.

3.5.2 CATCHMENT CONDITION & WATER QUALITY

The Hawkesbury-Nepean River catchment has a long history of vegetation clearing, ecosystem disturbance, fragmentation and modification. Agricultural land-uses, dam construction and urban development have placed the catchment under extraordinary pressures. The allocation of water for irrigation purposes and diversion of Sydney's drinking water (approximately 90% of river flow) have significantly altered downstream flows and reduced the frequency and impact of storm and flood events.

The reserve's local river environs display the following characteristics:

- river subject to varying flows and flood impacts but with an overall reduced flow regime;
- high nutrient loadings, turbidity and reduced oxygen levels in water column;

- extensive clearing, disturbance and exotic weed invasion with localised bank instability and erosion along riverbanks and escarpment*;* and
- low levels of natural regeneration/ recruitment on disturbed lower riverbanks and escarpment.

The *Hawkesbury Lower Nepean Catchment Blueprint (2002)* focuses on tackling these issues at the sub-catchment level by adopting an integrated approach across several local government areas. The *Catchment Blueprint* emphasizes new opportunities with partnerships, education, advocacy and community involvement to deliver the desired outcomes.

3.5.3 FLOODING

The riparian corridor is subject to flooding and high stream bank erosion hazard as well as deposition of sedimentary materials as the flood waters recede. Long periods of relative stability and deposition are followed by periodic flood events of short duration but with long lasting impacts on bank stability, erosion and sedimentation. The affects of these natural processes can also be magnified and exacerbated by human-induced impacts. Refer to the City's *Flood (1:100 year) Maps.*

Although linked to periods of higher rainfall, flood events follow no regular pattern *(LandArc, 2007).* Flood planning is in accordance with the *NSW Flood Policy (1984), NSW Floodplain Management Manual (2001), Hawkesbury Nepean Floodplain Management Strategy (adopted 1998)* and Council's Floodplain Risk Management Plan.

3.5.4 GEOLOGY & SOIL LANDSCAPES

Streeton Lookout is comprised of three distinctive soil landscapes as described in *"Soil Landscapes of the Penrith 1:100 000 Sheet"* (Bannerman and Hazelton, 1990) as follows:

- Freemans Reach – fluvial landscape (lower riverbank);
- Hawkesbury – colluvial landscape (escarpment); and
- Woodlands – erosional landscape (upper terrace).

Lower riverbank

The reserve's lower river bank is typically alluvium derived from Narrabeen Group, Hawkesbury Sandstone and Wianamatta Group materials. This is a fluvial landscape described as Freemans Reach (fr). Soils typically consist of deep brown sands and loams, apedal to moderately structured and usually friable with the following limitations:

- Fertility: generally low, low to very low available water holding capacity and low to very low levels of nitrogen and phosphorus.

- Erodibility: highly erodible due to the high percentage of fine sand and low to very low organic matter content.
- Erosion Hazard: very high to extreme for concentrated flows.
- Landscape Limitations: flood hazard, localised high water tables, localised seasonal waterlogging, water erosion hazard, wave erosion hazard and non-cohesive soil.
- Urban Capability: nil due to flooding.

Steep escarpment

The geology and soil landscape of the steep escarpment is described as Hawkesbury Sandstone (ha). It is characterised by a medium to coarse-grained quartz sandstone with minor shale and laminite lenses. The local geology, soil landscape and native vegetation of the escarpment however display characteristics which are more consistent with the description for Gymea (gy). The soils are typically shallow with loose, coarse sandy loam in the topsoil and earthy, yellowish brown clayey sand in the subsoil overlaying sandstone bedrock. Soil limitations include:

- Fertility: generally shallow, very strongly acidic, high permeability and very low nutrient status (very low levels of nitrogen and phosphorus).
- Erodibility: rock outcrops/ very low erodibility.
- Erosion Hazard: very high to extreme for concentrated flows.
- Landscape Limitation: erosion hazard, rock outcrop, localised rock fall hazard, steep slopes and cliffs and shallow soil.
- Urban Capability: generally low to moderate.

Upper terrace

The geology of the upper flat terrace is described as Mittagong Formation which is characterised by alternating bands of shale and fine to medium grained quartz sandstones. Rock outcrops are minimal in this landscape. The soil landscape is classified as Woodlands (wl). The soils in this part of the reserve tend to be deep (150-300cm) brown sandy loam, clay loam and yellowish brown clay. Topsoils are typically stony with a hard setting surface. Soil limitations include:

- Fertility: low to very low nutrient status.
- Erodibility: generally low erodibility.
- Erosion Hazard: low to moderate erosion hazard.
- Landscape Limitations: localised rock outcrops and steep slopes.
- Urban Capability: generally low to moderate, subject to geo-technical engineering input.

3.5.5 NATIVE VEGETATION

Natural heritage values
Although highly disturbed, fragmented and modified by past clearing and exotic weed invasion, the reserve retains a high level of biodiversity, dynamic ecological processes, ongoing natural evolution and ability for its ecosystems to be self-perpetuating. These are vital criteria defining the reserve's natural heritage values. The native vegetation communities occur as a mosaic with indistinct boundaries.

Endangered ecological communities
Four distinctive ecological communities can be identified in the reserve. All are listed as endangered ecological communities in Part 3 of Schedule 1 NSW *Threatened Species Conservation Act 1995* (1995):

1. Upper flat portion of the reserve retains a Cumberland Plain Woodland community (CPW), also described as Shale Hills Woodland or Moist Shale Woodland dominated by Grey Box, Ironbarks and Forest Red Gum;
2. Escarpment (adjacent to the lookout/ picnic area) has a largely cleared canopy. The small tree/ shrub stratum is dominated by dry rainforest components (WSDR) incl. Grey Myrtle *(Backhousia myrtifolia)* thicket and tangled vines. It retains regionally rare species such as Staff Vine *(Celastrus australis);*
3. Escarpment (eastern and western sections) retains a largely intact Shale Sandstone Transition Forest (SSTF) dominated by Ironbarks;
4. The riverbank retains remnant River-flat Eucalypt Forest (RFEF) or alluvial woodland including mature River Oaks.

1. Cumberland Plain Woodland (CPW)

Full description:	Cumberland Plain Woodland (sub-group: Shale Hills Woodland or Moist Shale Woodland) – upper terrace (incl. lookout/ picnic area) adjacent to Cliff Road and Terrace Road.
Former descriptions:	n/a
Condition/ status:	fragmented/ modified; varies up to 30-70% cover); varying condition and health with many canopy trees displaying some degree of decline and crown die-back; shrub understorey is virtually absent and exotic grasses/ weeds dominate the groundcover stratum.
Age structure:	25-40 years+ [dom.] regrowth some old growth specimens (up to 100 years+)
Current threats:	uncontrolled traffic movements/ parking, physical damage, soil compaction, increased nutrients (septic toilet system), altered drainage, current mowing/

	edging regime, dumping garden refuse, exotic weed invasion and crown die-back.
Canopy species:	Grey Box *(Eucalyptus moluccana)* [dom.], Narrow-leaved Ironbark *(Eucalyptus crebra),* Broad-leaved Ironbark *(Eucalyptus fibrosa)* and Forest Red Gum *(Eucalyptus tereticornis).*
Small tree/ shrub stratum:	absent
Ground stratum:	*Austrostipa ramosissima* [dom.], *Aristida ramosa, Entolasia stricta, Paspalidium criniforme, Chloris ventricosa, C. truncata, Sporobolus creber, Einadia trigonos, E. nutans, Plectranthus parviflorus, Brunoniella pumilio, Dichondra repens* and *Wahlenbergia gracilis.*
Climbers:	*Glycine microphylla*

2. Shale Sandstone Transition Forest (SSTF)

Full description:	Shale Sandstone Transition Forest (low sandstone influence) – escarpment/ slopes (eastern and western sections of reserve).
Former descriptions:	Ironbark-Red Gum-Grey Gum Woodland.
Condition/ status:	largely intact/ 70-100% native canopy cover; generally good condition and health/ some crown die-back; small tree/ shrub understorey largely intact; varying level of disturbance/ exotic weeds in understorey/ ground stratum.
Age structure:	30-60 years+ [dom.] some old growth specimens (up to 80-100 years+)
Current threats:	adjoining residential development – increased nutrients, altered drainage, clearing for views, dumping garden refuse/ exotic weeds and die-back.
Canopy species:	Narrow-leaved Ironbark *(Eucalyptus crebra)* [dom.], Broad-leaved Ironbark *(Eucalyptus fibrosa),* Grey Gum *(Eucalyptus punctata),* Forest Red Gum *(Eucalyptus tereticornis)* and Grey Box *(Eucalyptus moluccana).*
Small tree/ shrub stratum:	Blackthorn *(Bursaria spinosa),* Common Breynia *(Breynia oblongifolia),* Native Indigo *(Indigofera australis)* and Gorse Bitter-pea *(Daviesia ulicifolia).*
Ground stratum:	*Themeda australis, Einadia trigonos, Entolasia stricta, Dichondra repens* and *Wahlenbergia gracilis.*
Climbers:	*Geitonoplesium cymosum, Pandorea pandorana, Clematis glycinoides and Glycine microphylla.*

3. Western Sydney Dry Rainforest (WSDR)

Full description:	Western Sydney Dry Rainforest in the Sydney Basin Bioregion.
Former descriptions:	Dry Rainforest and Vine Thicket.
Condition/ status:	native canopy cover largely cleared (<5-10%)/ fragmented/ remnant mesic understorey; vines/ shrubs [dom.]; varying level of exotic weed invasion.
Age structure:	some old growth vines/ shrubs (up to 100 years+)
Current threats:	increased nutrients, altered drainage, clearing for views, dumping garden refuse/ exotic weeds and climate change.
Emergent canopy species:	Narrow-leaved Ironbark *(Eucalyptus crebra),* Grey Gum *(Eucalyptus punctata),* Forest Red Gum *(Eucalyptus tereticornis),* Grey Box *(Eucalyptus moluccana),* Kurrajong *(Brachychiton populneus)* and White Cedar *(Melia azedarach* var. *australasica).*
Small tree/ shrub stratum:	Grey Myrtle *(Backhousia myrtifolia)* [dom.], Large Mock Olive *(Notelaea longifolia forma. longifolia),* Blackthorn *(Bursaria spinosa),* Common Breynia *(Breynia oblongifolia),* Native Quince *Alectryon subcinereus*, Hop Goodenia *(Goodenia ovata)* [dom.], Orange Thorn *(Citriobatus pauciflorus)* and Native Indigo *(Indigofera australis).*
Ground stratum:	*Plectranthus parviflorus, Opercularia hispida* and *Dichondra repens.*
Climbers:	*Celastrus australis* [dom.], *Aphanopetalum resinosum*, *Clematis glycinoides, Geitonoplesium cymosum* and *Pandorea pandorana.*

4. River-flat Eucalypt Forest on coastal floodplains (RFEF)

Full description:	River-flat eucalypt forest on coastal floodplains of the NSW North Coast, Sydney Basin and South East Corner bioregions.
Former descriptions:	Sydney Coastal River-flat Forest (Alluvial Woodland/ Riparian Forest).
Condition/ status:	highly fragmented/ modified; generally <10-30% native canopy cover; exotic weeds dominate understorey/ ground stratum.
Current threats:	bank instability, erosion and exotic weeds.
Canopy species:	River Oak *(Casuarina cunninghamiana)* no further details.

PHOTO 8: View of fragmented Cumberland Plain Woodland [Moist Shale Woodland] in eastern portion of lookout (3.09.2008).

PHOTO 9: Western Sydney Dry Rainforest on escarpment – highly impacted by clearing, dumping and weed invasion (3.09.2008).

PHOTO 10: Shale Sandstone Transition Forest [eastern portion of reserve adjacent to residences] looking west (3.09.2008).

PHOTO 11: View from lookout to riverbank [below] of River Oaks – highly disturbed/ fragmented River-flat Eucalypt Forest (3.09.2008).

3.5.6 FAUNA HABITAT

The reserve's endangered ecological communities provide habitat for a range of native fauna particularly species with mobility (eg. birds and bats), reptiles and smaller invertebrates. Many common bird species were observed during the study including Galah, Eastern Rosella, Australian Magpie, Australian Magpie-lark, Crested Pigeon, Superb Fairy Wren, Silvereye, Noisy Miner and Pied Currawong. There is currently no detailed assessment of the reserve's biodiversity.

Workshop participants supported a community volunteer Bushcare program but emphasized the importance of appropriate phasing of work to retain vital habitat for small bird species such as the Superb Fairy Wren.

Feral animal populations including European foxes, cats and rabbits are likely to occur in the reserve. These feral animals have a significant impact on the recruitment of native faunal populations, particularly ground-dwelling species. Control and monitoring programs have been very successful in re-establishing native populations.

3.5.7 CONSERVATION SIGNIFICANCE

Endangered ecological communities

The endangered ecological communities are representative of a gradient associated with the site's topography, aspect, geology, soils and fire history (ie. elevated terrace and steep south-facing scarp to the riverbank). There are only a few sites within the Cumberland Plain which have similar physical characteristics. Notably, the Cumberland Plain Woodland (CPW) at the lookout/ picnic area, adjoining the scarp-line, shares characteristics with Shale

Hills Woodland and Moist Shale Woodland (as described in *NPWS Native Vegetation Maps of the Cumberland Plain, Western Sydney* (2000) as Units 9 & 14 respectively).

Moist Shale Woodland is a highly restricted transitional community occupying discrete areas of higher elevation, rainfall and ruggedness at the edge of the Cumberland Plain. Moist Shale Woodland tends to be associated with another highly restricted community – Western Sydney Dry Rainforest (WSDR). At Streeton Lookout dry rainforest occurs on the sheltered, moist south-facing scarp (ie. adjoining the lookout/ picnic area) with a transition to Moist Shale Woodland along the top of the scarp. The gradient may also reflect a stage in recovery from fire.

The lookout/ escarpment has a long history of disturbance, clearing for views and weed invasion. The remnant Western Sydney Dry Rainforest community is now highly fragmented. Nevertheless, this community still supports a range of native shrub and vine species, some of which have regional significance (eg. *Alectryon subcinereus, Celastrus australis, Aphanopetalum resinosum*). Some individual specimens are of exceptional age (eg. *Notelaea longifolia* forma. *longifolia, Celastrus australis* and *Pandorea pandorana).*

These fragmented, modified and highly restricted endangered ecological communities continue to be threatened by a range of ongoing management issues. Uncontrolled parking and traffic movements, soil compaction and erosion, dumping of garden refuse, current maintenance/ mowing, clearing and lack of any weed management restricts opportunities for natural regeneration. It is vital that these endangered ecological communities are protected and given opportunities for renewal and regeneration.

The conservation significance of the reserve's ecological communities can be summarized as follows:

- four listed endangered ecological communities (two of which are highly restricted) under the *Threatened Species Conservation Act 1995* (TSC Act);
- reserve's endangered ecological communities are part of the broader Cumberland Plain Endangered Ecological Communities (CPEECs) – the subject of a future Recovery Plan to be prepared by DECC;
- reserve retains valuable habitat for threatened species and acts as a storehouse of genetic diversity with important ecological, scientific and educational values;
- native riparian vegetation is broadly protected under the *Native Vegetation Conservation Act 2003* and *SREP No. 20 Hawkesbury-Nepean River (No.2 – 1997);*

- reserve's bushland adjoins other areas of contiguous bushland along the escarpment providing opportunities for bio-linkages and genetic exchange;
- Western Sydney Dry Rainforest (WSDR) is restricted to very small, highly fragmented remnants with a total area of <2 Ha in the Sydney Basin Bioregion;
- occurrence of regionally significant species within Western Sydney Dry Rainforest including *Alectryon subcinereus, Celastrus australis* and *Aphanopetalum resinosum;*
- potential habitat for threatened fauna species such as the Squirrel Glider, Yellow-bellied Glider, Grey-headed Flying Fox, Eastern Free-tail Bat, Greater Broad-nosed Bat, Swift Parrot, Superb Parrot, Turquoise Parrot, Major Mitchell's Cockatoo, Barking Owl, Powerful Owl, Black-chinned Honeyeater, Regent Honeyeater, Square-tailed Kite, Bush Stone Curlew, Speckled Warbler, Eastern False Pipistrelle and Cumberland Plain Land Snail.
- opportunities to restore degraded bushland, develop enhanced habitat values and bio-linkages.

Forty-three (45) native plant species have been identified at Streeton Lookout (refer to *Appendix II – Schedule of Existing Native Plant Species)*. The reserve is likely to support far more native plant species.

PHOTO 12: The reserve's rare and endangered Western Sydney Dry Rainforest community supports regionally significant species such as this Staff Vine *(Celastrus australis)* (3.09.2008).

3.5.8 WEED MANAGEMENT

Exotic weeds

In terms of native vegetation management, a weed is defined as any non-indigenous plant, including native species which may have been introduced from other genetic sources or geographical regions. Community consultation identified weed management as an important issue affecting the reserve. Streeton Lookout has no current integrated weed management program.

Weeds tend to be fast-growing colonising species with highly aggressive reproductive strategies. The level of weed invasion has a close correlation with past clearing of native vegetation, soil disturbance and the current management regime (ie. highly disturbed/ modified areas with minimal maintenance tend to have high levels of weeds). The lookout/ picnic area and adjoining escarpment are heavily impacted by weeds.

Exotic grasses such as African Love Grass (*Eragrostis* spp.), Common Couch *(Cynodon dactylon)* and Kikuyu Grass *(Pennisetum clandestinum)* dominate the ground stratum of the open woodland at the lookout and picnic area. Exotic shrubs and vines such as Lantana *(Lantana camara),* Broad-leaved and Small-leaved Privet (*Ligustrum* spp.), Moth Vine *(Araujia sericiflora),* Cape Ivy *(Delairea odorata),* Japanese Honeysuckle *(Lonicera japonica),* Choko Vine *(Sechium edule),* Bridal Creeper *(Asparagus asparagoides)* and Trad *(Tradescantia fluminensis* and *Tradescantia* sp. [large-leaf form]) are common components of the shrub/ ground stratum of the escarpment. These exotic weed species vigorously compete with remnant native dry rainforest species. Although providing some protection and stability to the steep escarpment, introduced weed species have an overall negative impact on natural biodiversity values, native regeneration/ recruitment, scenic character and visual amenity. Refer to *Appendix III – Schedule of Exotic Weed Species*.

Some of these weed species have been declared as noxious under the *Noxious Weeds Act 1993* for the control area of Hawkesbury River County Council (refer to *Table 3: Noxious Weed Species – Streeton Lookout)*. All declared noxious weed species are to be managed in accordance with the legal requirements for each category. All treatments should be carefully targeted to avoid harm to standing native plants and natural regeneration. Indiscriminate broad-scale chemical applications should be avoided. For a full list of noxious weed declarations for Hawkesbury River County Council (HRCC) refer to: http://www.dpi.nsw.gov.au/agriculture/noxweed/noxious-app

TABLE 3:
Noxious Weed Species – Streeton Lookout

Weed	Class	Legal Requirements
Lantana *(Lantana* spp.*)*	5	notifiable weed
Prickly Pear	4	control growth & spread
Privet (Broad-leaf) *(Ligustrum lucidum)*	4	control growth & spread
Privet (Small-leaf) *(Ligustrum sinense)*	4	control growth & spread

Weed management/ bush regeneration strategy
The proposed weed management/ bush regeneration and restoration strategy aims to address the following:

- establish an integrated strategy focused on sustainability;
- seek ongoing government funding assistance/ grants;
- promote and support local community volunteer involvement;
- supplement program with contract bush regenerators.

The reserve has no current weed management/ bush regeneration strategy. The local community has expressed interest in establishing a 'Friends of Streeton Lookout' or similar volunteer Bushcare group to assist in general maintenance and the rehabilitation of the reserve's bushland (see *2.3 Key Issues).* This program would help to establish a greater sense of community ownership of the reserve as well as opportunities for better management, monitoring and regulation of high-impact recreational activities and anti-social behaviour (eg. vandalism, dumping refuse, etc.). General maintenance of the reserve was identified as possibly the most important issue to address.

A Bushcare program would need to be coordinated through Council staff. Volunteers are provided with direction and technical advice including training, tools, signage for work sites, rubbish removal, newsletters and use of a community nursery to propagate local native plants. The program is an integral part of managing Hawkesbury City's bushland. Public safety and risk management issues would be a priority with such a group. The steep escarpment would restrict any volunteer involvement in this location. It is envisaged that a Bushcare group would only work within the lookout/ picnic area and adjoining upper flat areas (ie. Cumberland Plain Woodland).

NSW government youth training initiatives and natural heritage grant funding provide further opportunities. Additional funds should be allocated for contract bush regenerators to develop weed management and rehabilitation strategies, particularly along the upper escarpment/ edge to the lookout and picnic area (incl. Western Sydney Dry Rainforest).

PHOTO 13: The Cumberland Plain Woodland ground stratum, although dominated by exotic weeds (eg. African Love Grass) retains high native biodiversity (3.09.2008).

PHOTO 14: Exotic weeds (eg. Lantana) grow over irrigation pipe-work. Weeds dominate much of the ground/ shrub strata of the escarpment/ Western Sydney Dry Rainforest (3.09.2008).

The strategy should be structured in accordance with specific site conditions, level of disturbance and weed invasion, relative resilience and integrity of the reserve's ecological communities. It is envisaged that the program of work would initially focus on targeted weed species (including noxious species) using a combination of bush regeneration and restoration strategies. This work should be integrated with improvements to passive recreational infrastructure (ie. pathway linkages/ signage and picnic facilities) and the bushfire management strategy.

The lookout/ picnic area and adjoining flat area (to the east of the amenities building) retain the potential for significant natural recruitment to occur subject to restrictions on traffic movements and modification of current maintenance practices (ie. broad-scale mowing/ slashing and edging).

Community education in weed management and conservation techniques should also be a priority to address ad hoc maintenance (eg. mowing by local residents) and inappropriate landscaping (eg. turfing/ exotic grasses within natural areas). These responses by local residents are directly related to the lack of general maintenance.

Furthermore, the potential impact of the bush regeneration strategy on the lookout's scenic qualities will need to be addressed through appropriate management, including selective removal/ pruning for views. For areas requiring restoration and enhancement it is important that genetic integrity is maintained with the use of only local provenance-sourced indigenous species.

3.6 RECREATION, ACCESS & SOCIAL VALUES

3.6.1 OVERVIEW

Streeton Lookout is a valuable community and regional asset and finite natural resource. There are important opportunities as well as significant constraints on land capability and future uses. Inappropriate types of development and uses pose potential threats to existing values.

Sustainability, a key principle of Hawkesbury City Council's Management Plan, can only be achieved through a balanced and sensitive approach to resource management. Accordingly, future development and management of this community land must ensure careful integration of economic, social and environmental factors.

Previous sections have described the importance of the reserve's natural setting, its scenic views, Aboriginal and cultural heritage, environmental and biodiversity values. Recreational values are closely linked with environmental quality and the opportunities provided by the setting. Community consultation highlighted these values, key issues and future opportunities (see summary in *2.3 Key Issues*).

Public access (including provision for vehicular parking and pedestrian linkages), quality of passive recreational facilities, ongoing maintenance, public safety and irrigation infrastructure are key issues which require further examination.

3.6.2 EXISTING RECREATIONAL INFRASTRUCTURE

The central, flat upper portion of the reserve (lookout/ picnic area) has easy, level off-street access from Cliff Road. There are six timber slat/ metal frame picnic settings (ie. tables/ seating) scattered throughout this section of the

reserve. A brick public amenities building (septic system) and in-ground tanks are a central feature. Concrete pathways skirt the amenities building. The top of the escarpment adjoining the picnic area is fenced (1.2 metre high chain-wire) to restrict public access. Irrigation meter boxes are fixed to two centrally located power poles and the eastern wall of the amenities block. The western wall has been painted with a mural. For a detailed description of recreational facilities, improvements and their condition see *Table 1: Land Description – Existing Facilities & Improvements.*

3.6.3 VEHICULAR ACCESS AND PARKING

Unsealed vehicular access and car parking/ turning areas lead to the top of the escarpment (adjacent to the amenities building) and to the north-western corner of the reserve. Treated timber log post and rail barriers/ bollards and log edging to internal roads are ubiquitous features. A log post and rail vehicular barrier, located adjacent to the amenities block, restricts internal vehicular thru traffic between the western and eastern section of the lookout. Most of this recreational infrastructure is in fair to poor condition. Some log barriers with exposed steel rods are in need of urgent repair.

On the eastern side of the amenities block, a second vehicular entry/ exit point provides broad access (approximately 30 metres in width) to an unformed parking area and large vehicle turning area. This second entry/ exit point is only 20 metres away from the first (described above). There is no other infrastructure in this section of the reserve. These expansive areas of exposed and compacted gravel surfaces define the broader visual character of the lookout. There is no delineation of car parking spaces, traffic flow and management. At various times these areas are also being used for stockpiling of materials for road maintenance. The physical damage and compaction caused by uncontrolled vehicular movements is having a severe and long-term impact on the health of the reserve's native trees. Many are suffering severe die-back. Opportunities for natural recruitment/ regeneration are also restricted. The natural setting and scenic qualities are gradually being diminished by these activities.

Uncontrolled vehicular impacts extend beyond the reserve's northern boundary onto the public verge. Local buses use a separate unsealed thoroughfare and bus stop along the frontage of Streeton Lookout adjacent to the Terrace Road and Cliff Road intersection. These traffic movements further impact on the environmental quality of the reserve.

3.6.4 PUBLIC AMENITIES AND SHELTER

Although popular with large tour groups (up to 40 people)/ events and rallies the current infrastructure (including the amenities block) is simply inadequate to support these concentrated regional visitor loadings. Apart from the amenities block there is no shelter from prevailing weather conditions.

PHOTO 15: The reserve is highly impacted by uncontrolled vehicular movements – dusty in dry periods and muddy in the wet. Vehicles are increasing soil compaction, erosion and 'die-back' of native vegetation leading to loss of scenic quality and recreational values (3.09.2008).

PHOTO 16: Construction of BMX jumps/ multiple tracking by vehicles, rubbish dumping and vandalism are restricting opportunities for natural recruitment and regeneration (3.09.2008).

3.6.5 PEDESTRIAN ACCESS AND CIRCULATION

Regional visitors seeking the famous vista painted by Arthur Streeton have to make their way to vantage points along the reserve's unsealed internal roads. These roads can be either muddy (during wet weather) or dusty (hot dry periods). The only existing pedestrian pathway connects the amenities block to an unsealed turning area (western side). Surface run-off is also directed to this point creating an eroded channel and wash-away over the top of the escarpment.

The Artist's Trail signage is located at the western end of the reserve. A large ants nest is located adjacent to the sign. Tour bus operators at the community workshop raised this issue regarding public accessibility to this vantage point. Self-guided/ independent visitors may have difficulty finding the lookout and this sign as there is no directional signage from connecting roads and none within the reserve's car parking areas.

3.6.6 IRRIGATION INFRASTRUCTURE AND PUBLIC SAFETY

The reserve's irrigation infrastructure including power poles, attached meter boxes, electrical cabling and pipelines compete for space in the picnic area and visually disrupt the scenic vistas. A number of meter boxes have been attached to two centrally located power poles while other meter boxes have been attached to the eastern wall of the amenities block. A single discrete location away from important scenic vistas would be preferable.

A vandalised security gate in this location currently allows public access to derelict steps and a steel ladder perched on a precipitous cliff-face. This damaged infrastructure raises public safety concerns and is in need of urgent attention and repair. As a further priority action, private infrastructure and easements traversing community land need to be addressed in accordance with local government legislation governing the use of community land.

Currently, the chain-wire safety fence extends only along the top of the escarpment adjacent to the picnic area (western section). This fencing should be extended along the top of the escarpment (eastern section of lookout) to restrict public access and promote environmental protection.

PHOTO 17: Irrigation infrastructure including power poles, attached meter boxes, electrical cabling and pipelines compete for space in the picnic area and visually disrupt the scenic vistas.

PHOTO 18: Security gate/ fencing has been repeatedly vandalised allowing unrestricted access to cliff-top steps and ladder.(3.09.2008).

3.7 MANAGING RECREATIONAL IMPACTS

It is important to expand the reserve's role as a valuable community and regional asset. Improvements to vehicular access, parking, pedestrian circulation, passive recreational facilities (including amenities and shelter) and maintenance are vital components of the strategy. Moreover, recreational impacts need to be managed so that fragile and environmentally sensitive areas are protected and given opportunities for renewal and expansion. The reserve also offers special opportunities for interpretation and education in its natural, Aboriginal and cultural heritage. It is essential that all environmental and social impacts are managed on a sustainable basis.

This section of the plan of management has defined the reserve's key values and established objective limits on the types and amounts of change that are either desirable or acceptable. The following provides a summary of management objectives:

- maintain and promote long term sustainability of the reserve as a limited and finite resource;
- enhance opportunities for visitors (local community and regional);
- promote enjoyment of the reserve's scenic, natural, cultural, recreational and social values in a quality natural setting;
- improve the level of maintenance of facilities and infrastructure and improve monitoring of unauthorised activities;
- provide appropriate measures to rationalise and control vehicular traffic movements and parking;

- enhance circulation by establishing all-weather shared pedestrian/ cycleway linkages between facilities and lookout;
- restrict visitor dispersal within fragile ecological areas and regulate inappropriate high-impact recreational activities;
- review management/ maintenance practices which are having a negative impact on fragile ecological areas (ie. establish management zones/ protective fencing and signage);
- implement an integrated weed management and restoration strategy including volunteer involvement and education;
- provide directional and interpretive signage to improve visitor orientation, education and behaviour (ie. promote opportunities for low-impact recreation);
- address safety and risk management issues (eg. security of irrigation easement and extend safety fencing along top of scarp);

In establishing limits of desirable or acceptable change, this plan of management provides a framework for the reserve's future management.

3.8 VISION STATEMENT

The following statement provides a vision for Streeton Lookout which forms the basis for the following management strategies:

"To ensure appropriate protection, management and enhancement of the reserve's natural setting, its scenic, cultural, environmental, recreational and social values in accordance with the objectives of community land management for the benefit of the broader community and for future generations".

...

4.0 MANAGEMENT STRATEGIES

4.1 OBJECTIVES

This section of the plan of management addresses the following objectives:

- *to establish core objectives for each of the community land categories;*
- *to develop an action plan for implementation of core objectives and management strategies (ie. desired outcomes);*
- *to develop performance targets to assess and monitor strategies;*
- *to assign directions and priorities (spanning the next 5-years);*
- *to address future leases and licences; and*
- *to develop a master plan for implementation of the strategic plan.*

4.2 COMMUNITY LAND – CORE OBJECTIVES

In accordance with the *Local Government Act 1993,* each category and sub-category are provided with a set of core objectives. Refer to *Table 4: Schedule of Core Objectives.*

4.3 ACTION PLAN

The following Action Plan (refer to *Table 5: Action Plan – Sheets 1-7*) is divided into four separate sections based on desired outcomes and core objectives for this community land (see column 1). Each section includes the following:

- *performance targets* or *management objectives* (column 2);
- item or reference number (column 3);
- *means of achievement* or *management actions* (column 4);
- *means of assessment* of the actions (column 5);
- *priority ranking* for each management action (column 6).

Desired Outcomes (column 1)
The sections are divided into the following headings in accordance with the desired outcomes and core objectives as shown:

1. **Community land management – development, land uses, activities, leases, licences and other estate**
   To establish an appropriate management framework and guidelines for assessing development, land uses, activities, leases, licences and other estate in compliance with requirements for community land categorised as park, natural area – bushland, natural area – escarpment and natural area – watercourse.

2. **Indigenous and cultural heritage**
   To protect, manage and promote understanding and interpretation of Aboriginal and Non-Aboriginal cultural heritage values.

3. **Environment/ biodiversity**
   To protect, manage and enhance environmental quality, scenic character and biodiversity values.

4. **Recreation, facilities and access**
   To maintain and enhance existing recreational facilities and to improve public access, linkages and opportunities for passive recreation.

Performance targets (column 2)
The *desired outcomes* and *core objectives* (refer to *1.5 Community Land Categorisation and 4.2 Community land – Core objectives)* have guided the development of *performance targets* in the Action Plan.

Management actions/ item no. (columns 3 and 4)
The performance targets or management objectives provide the framework for developing specific *management actions* or the *means of achievement*. Each action is assigned an item number based on the relevant section (eg. Sec. 1: A1 to A11, followed by Sec. 2: B1 to B6, etc.).

Performance measures (column 5)
The Action Plan establishes a system of checks and balances to assess actions in relation to performance (ie. *means of assessment)*.

Priorities
Priorities for each management action are assigned according to relative importance – very high, high, medium and low. It is envisaged that actions will be addressed on a priority basis, by the Policy and Services Unit responsible, and in accordance with the means of assessment as follows:

VERY HIGH	=	1 year
HIGH	=	1-2 years
MEDIUM	=	3-4 years
LOW	=	up to 5 years

4.4 CAPITAL WORKS PROGRAM

Priorities and cost estimates are further developed in the 5-year capital works program (refer to *Table 6: Capital Works Program*). The Opinion of Probable Landscape Construction Costs is based on the Landscape Masterplan and is indicative only.

4.5 LANDSCAPE MASTERPLAN

The Landscape Masterplan (refer to *Figure 5: Landscape Masterplan*) identifies key management actions to be implemented throughout the 5-year capital works program, subject to available funding.

…

TABLE 4
SCHEDULE OF CORE OBJECTIVES

	core objectives
community land management	**Management strategies must be consistent with community land categories and their respective core objectives as identified in this plan of management.**
	Core Objectives: Management of community land categorised as a Park (36G) "The core objectives for management of community land categorised as a park are: a) to encourage, promote and facilitate recreational, cultural, social and educational pastimes and activities, and; b) to provide for passive recreational activities or pastimes and for the casual playing of games, and; c) to improve the land in such a way as to promote and facilitate its use to achieve the other core objectives for its management."
	Core Objectives: Management of community land categorised as a Natural Area (36E) "The core objectives for management of community land categorised as a natural area are: a) to conserve biodiversity and maintain ecosystem function in respect of the land, or the feature or habitat in respect of which the land is categorised as a natural area, and; b) to maintain the land, or that feature or habitat, in its natural state and setting, and; c) to provide for the restoration and regeneration of the land, and; d) to provide for community use of and access to the land in such a manner as will minimise and mitigate any disturbance caused by human intrusion, and; e) to assist in and facilitate the implementation of any provisions restricting the use and management of the land that are set out in a recovery plan or threat abatement plan prepared under the Threatened Species Conservation Act 1995 or the Fisheries Management Act 1994."
	Core Objectives: Management of community land categorised as a Natural Area: Bushland (36J) "The core objectives for management of community land categorised as bushland are: a) to ensure the ongoing ecological viability of the land by protecting the ecological biodiversity and habitat values of the land, and flora and fauna (including invertebrates, fungi and micro-organisms) of the land and other ecological values of the land, and; b) to protect the aesthetic, heritage, recreational, educational and scientific values of the land, and; c) to promote the management of the land in a manner that protects and enhances the values and quality of the land and facilitates public enjoyment of the land, and to implement measures directed to minimising or mitigating any disturbance caused by human intrusion, and; d) to restore degraded bushland, and; e) to protect existing landforms such as natural drainage lines, watercourses and foreshores, and; f) to retain bushland in parcels of a size and configuration that will enable the existing plant and animal communities to survive in the long term, and; g) to protect bushland as a natural stabiliser of the soil surface".
	Core Objectives: Management of community land categorised as a Natural Area: Escarpment (36L) "The core objectives for management of community land categorised as an escarpment are: a) to protect any important geological, geomorphological or scenic features of the escarpment, and b) to facilitate safe community use and enjoyment of the escarpment".
	Core Objectives: Management of community land categorised as a Natural Area: Watercourse (36M) "The core objectives for management of community land categorised as watercourse are: a) to manage watercourses so as to protect the biodiversity and ecological values of the instream environment, particularly in relation to water quality and water flows, and b) to manage watercourses so as to protect the riparian environment, particularly in relation to riparian vegetation and habitats and bank stability, and c) to restore degraded watercourses, and d) to promote community education, and community access to and use of the watercourse, without compromising the other core objectives of the category".

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TABLE 5
ACTION PLAN

community land management

Performance Target (Management objectives)	Item	Means of Achievement (Management Actions)	Means of Assessment (of the actions)	Priority
Desired Outcome: To establish an appropriate management framework and guidelines for assessing development, land uses, activities, leases, licences and other estate. **Core Objectives: Management of community land categorised as park (36G), natural area: bushland (36J), natural area: escarpment (36L) and natural area: watercourse (36M).**				
Guiding legislation: To ensure the reserve's planning and management are in accordance with relevant legislation and policy.	A1	Implement actions identified in this Plan of Management in accordance with Local Government Act 1993 and all other relevant legislation and policy.	Adoption of plan of management. Level of implementation over 5-years.	high
Future development, land uses and activities: To ensure consistency with community land categories and core objectives for park, natural area: bushland, escarpment & watercourse. To protect the reserve's natural/ cultural setting and all identified values from inappropriate uses, activities and development. To provide a balanced and appropriate level of passive recreational infrastructure. To implement actions which will prevent incremental impacts and address threatening processes. To promote the park's role as a broadly accessible and equitable community and regional asset. To address public safety and security issues. To improve visitor education and interpretation.	A2	Development proposals, land uses, activities, leases, licences and management practices must be consistent with the following requirements: - demonstrate consistency with community land core objectives - protect and enhance natural/ cultural setting, scenic quality, biodiversity, Aboriginal, and cultural heritage values and promote environmental sustainability; - address flood planning, bushfire hazard, public safety and risk management issues; - protect and restore native vegetation, fragmented habitat and bio-linkages; - promote balanced, sustainable management of recreational infrastructure; - continue to maintain and upgrade passive recreational facilities; - restrict inappropriate uses and activities, particularly high impact activities; - contribute to diversity and quality of recreational open space; - adequately provide for public access, equity and broad community use; - promote a safe environment for park visitors; - improve traffic management and parking; - facilitate programs in community education and interpretation of identified values.	Number and % of proposed developments that address and adhere to development guidelines. Measure trends over time.	ongoing
To ensure that development proposals will have a net positive impact in relation to identified values.	A3	Development proposals which may directly or indirectly threaten the natural/ cultural setting, scenic, heritage and/ or biodiversity values are not permissible.	as above	ongoing
To ensure protection and conservation of threatened species and populations.	A4	Proposed development, activities and uses must be consistent with threatened species legislation - Threatened Species Conservation Act 1995 and Environment Protection and Biodiversity Conservation Act 1999.	Number and % of proposed developments that address and adhere to development guidelines.	ongoing
To permit the use of the land for sustainable development of appropriate passive recreational facilities.	A5	This Plan of Management expressly authorises the development of existing and proposed passive recreational facilities [see *Figure 4: Landscape Masterplan*] subject to compliance with core objectives for the community land category and development guidelines [see items A2-A4 and D1-D15].	Proposed staged development/ capital works items completed subject to available funding and priorities.	ongoing
Leases, licences and other estate: To provide express authorisation for appropriate leases, licences or other estate over community land. To ensure consistency with relevant legislation affecting the uses and activities on community land. To permit the granting of leases, licences or other estate which are consistent with community needs and the community land core objectives.	A6	This Plan of Management expressly authorises the granting of leases, licences or other estate over the community land for the purposes of providing goods, services and facilities, and the carrying out of activities, appropriate to current and future needs within the local community and of the wider public in relation to any of the following: - public recreation, social and educational activities; - the physical, cultural, social and intellectual welfare or development of persons; and - only if the purpose for which it is granted is consistent with the core objectives of its categorisation.	Leases/ licences granted in accordance with Local Government Act 1993 and this Plan of Management. Assess against Council policies, principles and permitted uses consistent with community land categories and core objectives.	ongoing

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TABLE 5 [cont'd]
ACTION PLAN

	Performance Target (Management objectives)	Item	Means of Achievement (Management Actions)	Means of Assessment (of the actions)	Priority
community land management	**Desired Outcome: To establish an appropriate management framework and guidelines for assessing development, land uses, activities, leases, licences and other estate.** **Core Objectives: Management of community land categorised as park (36G), natural area: bushland (36J), natural area: escarpment (36L) and natural area: watercourse (36M).**				
	Leases and licences [cont'd]: To permit the granting of short-term and casual licences consistent with the relevant legislation.	A7	In accordance with Pt 4. Div.3 Cl.117 of the Local Government (General) Regulation 2005, leases, licences and other estates granted for the following purposes are exempt from the provisions of s.47A of the Local Government Act 1993:- (1) the provision of pipes, conduits or other connections under the surface of the ground for the connection of premises adjoining the community land to a facility of the council or other public utility provider that is situated on the community land; (2) use and occupation of the community land for events such as: - a public performance (ie. a theatrical, musical or other entertainment for amusement of the public); - the playing of a musical instrument, or singing for a fee or reward; - engaging in a trade or business; - playing of any lawful game or sport; - delivering a public address; - conducting a commercial photographic session; - picnics and private celebrations such as weddings and family gatherings; - filming. The use or occupation of community land for such short term or casual events listed is exempt only if the use or occupation does not involve the erection of any building or structure of a permanent nature.	Short-term and casual licences granted in accordance with relevant legislation and this Plan of Management. Measure trends over time.	ongoing
	Easements: To permit the granting of easements which are consistent with the Local Government Act 1993.	A8	This Plan of Management expressly authorises the granting of easements over the community land for the purpose of providing pipes, conduit or other connections under the surface of the ground. This is limited to easements that connect land adjoining community land to an existing water, sewer, drainage or electrical facility of council or other public utility provider that is situated on community land. The granting of easements on community land must be consistent with community land categories, their core objectives and the development guidelines in this Plan of Management.	Easements granted in accordance with relevant legislation and this Plan of Management.	ongoing
	Existing irrigation infrastructure: To address issues relating to irrigation infrastructure. To ensure consistency with legislative requirements.	A9	Review status of irrigation infrastructure and tenure on community land [incl. pumps, pipelines, electrical cabling, meter boxes, locked gate/ security fencing] in relation to legislative requirements of Local Government Act 1993 [see item A8].	Recommendations implemented in accordance with relevant legislation and this Plan of Management.	very high
	To address ongoing issues in relation to public safety and risk management.	A10	In the interim, ensure that existing locked gate/ security fencing are repaired as a matter of urgency and maintained to ensure public access to escarpment is restricted. Ensure that all infrastructure is maintained in accordance with relevant building & safety standards.	All public safety/ risk management issues addressed.	very high
	To restrict ad hoc and incremental additions, protect scenic character and quality of setting. To improve security and monitoring of anti-social behaviour in reserve.	A11	In the interim and subject to recommendations [item A9], relocate all meter boxes/ cabling from power poles [in picnic area] to amenities building [eastern wall]. Ensure that all meter boxes and cabling are secured. Relocate power poles to northern side of amenities building and install additional security/ floodlighting.	Works implemented in accordance with this Plan of Management.	high

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TABLE 5 [cont'd]
ACTION PLAN

	Performance Target (Management objectives)	Item	Means of Achievement (Management Actions)	Means of Assessment (of the actions)	Priority
heritage	**Desired Outcome: To protect, manage and promote understanding and interpretation of Aboriginal and Non-Aboriginal cultural heritage values.** **Core Objectives: Management of community land categorised as park (36G), natural area: bushland (36J), natural area: escarpment (36L) and natural area: watercourse (36M).**				
	To promote further research, investigation and interpretation of archaeological sites and relics.	B1	Continue to research Aboriginal and archaeological heritage within the reserve and broader Hawkesbury area in consultation with traditional Aboriginal custodians.	Investigations undertaken and recommendations implemented.	very high
	To ensure improved protection and management of potential archaeological sites.	B2	Potential archaeological deposits (PAD), sites and relics within the reserve or adjoining the reserve are to be properly protected and managed in accordance with the National Parks & Wildlife Act 1974 and the Heritage Act 1977.	Archaeological sites and relics protected in accordance with relevant legislation.	high ongoing
	To promote opportunities for dialogue and consultation with traditional Aboriginal custodians.	B3	Promote opportunities for consultation with the Indigenous community and encourage the support, interpretation and communication of Aboriginal cultural heritage.	Number of programs initiated/ level of involvement. Measure trends over time.	high ongoing
	To establish appropriate conservation and/ or interpretation elements in relation to Indigenous cultural and archaeological heritage.	B4	Install generic signage describing the role of 'Deerubbin' in the lives of the Darug people [eg. provision of fresh water, fishing, hunting and plants for food, fibres, tools, bark canoe-making, transportation and medicine] and the changes which followed European settlement of the valley. Develop text, graphics and location for signage in consultation with traditional Aboriginal custodians.	Interpretive signage developed and installed.	high
	To promote research and interpretation of cultural heritage and social values associated with early European settlement of this area.	B5	Continue to research and expand upon the community's understanding of the reserve's local history and context. Ensure appropriate integration of existing Artist's Trail signage [incl. improved pedestrian linkages and directional signage].	Research undertaken and recommendations implemented.	high
	To enhance quality of visitor experience, education and interpretation.	B6	Install additional interpretive signage describing views and landmarks [ie. anodised aluminium signage]. Provide a consistent system of materials/ maps and graphics.	Interpretive signage developed and installed.	medium
environment and biodiversity	**Desired Outcome: To protect, manage and enhance environmental quality, scenic character and biodiversity values.** **Core Objectives: Management of community land categorised as park (36G), natural area: bushland (36J), natural area: escarpment (36L) and natural area: watercourse (36M).**				
	Stream condition and water quality: To protect and restore the riparian environment and to address water quality and river health priorities.	C1	Continue to work in partnership with the Hawkesbury Nepean CMA to ensure effective implementation of water quality and river health priorities in accordance with the *Hawkesbury Lower Nepean Catchment Blueprint* and Catchment Action Plan [CAP].	Works implemented in accordance with HLNCP and CAP targets and priorities.	ongoing
	Protecting scenic and visual quality: To protect scenic and recreational amenity values.	C2	Provide appropriate resources for design and integration of proposed improvements to recreational facilities, consistent with the reserve's high scenic values [see items D1-D15].	Works implemented in accordance with the development guidelines identified in this Plan of Management.	ongoing
	To improve quality of the natural setting through restoration and regeneration of the reserve.	C3	Provide appropriate resources for establishing a weed management and bush regeneration/ restoration strategy [see items C7-C25]. Protect and manage scenic vistas and view corridors [see items A11 & C21].	Works implemented in accordance with this Plan of Management.	ongoing
	Biodiversity management: To address key threatening processes.	C4	Continue to identify, monitor and restrict the impact of key threatening processes [ie. weed invasion, predation by foxes/ feral cats, illegal clearing, multiple tracking, etc].	No. of targeted/ funded programs and results. Measure trends over time.	very high ongoing
	To control pest species and to enhance biodiversity and habitat values.	C5	Implement a program to control feral animals [eg. European fox, rabbits] as declared under the Rural Lands Protection Act 1998.	Control of pest animals in accordance with legislation.	high ongoing
	Community involvement: To promote dialogue and partnerships with adjoining land owners to address environmental and conservation issues impacting reserve.	C6	Liaise with adjoining land owners to address environmental issues affecting the reserve. Establish opportunities/ partnerships for developing conservation initiatives: - establish 'Friends of Streeton Lookout'; - monitor/ restrict dumping of garden refuse/ waste; - reduce build-up of litter/ regular maintenance and clean-ups;	Number of meetings held with land owners. Number of programs initiated/ level of involvement. Measure trends over time.	very high ongoing

TABLE 5 [cont'd]
ACTION PLAN

	Performance Target (Management objectives)	Item	Means of Achievement (Management Actions)	Means of Assessment (of the actions)	Priority
environment and biodiversity	**Desired Outcome: To protect, manage and enhance environmental quality, scenic character and biodiversity values.** **Core Objectives: Management of community land categorised as park (36G), natural area: bushland (36J), natural area: escarpment (36L) and natural area: watercourse (36M).**				
	Community involvement [cont'd]: To promote dialogue and partnerships with adjoining land owners to address environmental and conservation issues impacting reserve.	C6 [cont'd]	- restrict expansion of high impact activities [eg. BMX jumps/ multiple tracking]; - initiate weed management/ regeneration and restoration strategy; - promote appropriate bush fire management/ reduced fuel zones; - review opportunities for conservation agreements and incentives.	Number of meetings held with land owners. Number of programs initiated/ level of involvement. Measure trends over time.	very high ongoing
	Weed management/ restoration strategy: To address the long term objectives of building ecosystem resilience and durability. To seek grant funding/ assistance. To establish an integrated program involving local volunteers and contractors.	C7	Establish an appropriate weed management and targeted restoration strategy with the following objectives: 1. source ongoing government funding assistance/ grants for the program; 2. promote opportunities for local community (volunteer) involvement; and 3. expand and consolidate proposed program using contract bush regenerators; 4. maintain focus on recovery, recruitment, long term durability, consolidation and expansion of fragmented natural habitat and remnant native populations.	see below Level of funding per annum linked to positive net gains. Number of volunteers involved in program. Area/ % of reserve under restoration [over 5 years]. Relative condition/ resilience of bushland [over 5 years].	very high ongoing
	To promote partnerships with state government agencies, industry and local land holders to secure sustainable environmental outcomes.	C8	Seek an appropriate level of grant funding for weed management/ regeneration and restoration strategy from various State and Federal government sources [eg. Natural Heritage Fund, Hawkesbury Nepean CMA, Metropolitan Greenspace, etc].	Level of funding per annum linked to positive net gains. Measure trends over time.	very high ongoing
	To involve local volunteers in managing and restoring the reserve's natural and scenic values. To promote broader ownership and stewardship.	C9	Seek to establish a volunteer BushCare group as a key strategy of the program to assist in weed management/ restoration, rubbish removal, monitoring unauthorised activities and community education in appropriate visitor behaviour.	Numbers of volunteers/ groups actively involved in the environmental program. Measure trends over time.	high ongoing
	To provide appropriate assistance and support for community volunteers.	C10	Provide assistance and support in grant applications by volunteer groups. Ensure that volunteers are adequately supported, supervised and monitored [eg. leadership/ education, workplace safety, supply of tools/ materials, targeting/ staging of the program, removal of stockpiled weeds, etc].	Number of applications per annum. Measure success rate. Annual/ quarterly progress reports.	high ongoing
	To ensure a high level of supervision and public safety.	C11	Ensure BushCare group is adequately supervised at all times and restricted to working only within the upper flat level [ie. no work to be undertaken on escarpment].	Reporting by supervisor.	high ongoing
	To ensure a high level of expertise in implementing the strategy.	C12	Seek skilled contract labour [ie. qualified and experienced contract bush regenerators] to implement the broader objectives of the restoration strategy.	Level of funding for contract bush regeneration per annum. Annual/ quarterly progress reports.	high ongoing
	To establish an integrated weed management/ regeneration and restoration strategy. To build ecosystem resilience and durability. To secure and consolidate habitat values, bio-linkages and buffers. To expand the program subject to appropriate funding.	C13	Implement an integrated and targeted restoration strategy which focuses on the recovery, recruitment, long term durability, expansion and consolidation of fragmented natural habitat and native populations in order of priority: 1. Cumberland Plain Woodland [upper flat level incl. lookout/ picnic area]; 2. Western Sydney Dry Rainforest [upper embankment/ scarp adj. to lookout]; 3. Shale Sandstone Transition Forest [eastern & western sections]; 4. River-flat Eucalypt Forest [lower riverbank - subject to access]. For details of relative status and condition refer to *3.0 Basis for Management* .	Level of funding per annum linked to positive net gains. Area/ % of reserve under restoration [over 5 years]. Relative condition of bushland [over 5 years].	very high ongoing

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TABLE 5 [cont'd]
ACTION PLAN

	Performance Target (Management objectives)	Item	Means of Achievement (Management Actions)	Means of Assessment (of the actions)	Priority
environment and biodiversity	**Desired Outcome: To protect, manage and enhance environmental quality, scenic character and biodiversity values.** **Core Objectives: Management of community land categorised as park (36G), natural area: bushland (36J), natural area: escarpment (36L) and natural area: watercourse (36M).**				
	Weed management/ restoration strategy [cont'd]: To ensure the implementation of best-practice standards for the protection and management of natural areas and remnant native populations. To assist in and facilitate the implementation of any provisions restricting the use and management of the land that are set out in a recovery plan or threat abatement plan prepared under the TSC Act 1995 or Fisheries Management Act 1994.	C14	Ensure that the reserve's fragile natural areas/ remnant native vegetation are managed in accordance with prescribed best-practice standards as follows: - *Draft Recovery Plan for the Cumberland Plain Endangered Ecological Communities [CPEECs];* - *Draft Best Practice Guidelines for Bush Regeneration on the Cumberland Plain* [DLWC and the Australian Association of Bush Regenerators, 2003]; - *Management Principles to Guide the Restoration and Rehabilitation of Indigenous Vegetation* [Greening Australia]; and - *Florabank Guidelines* for native seed collection, production, handling & storage.	Compliance in all respects with the national goal of the BushCare National Vegetation Initiative - ie. to halt any further losses and to achieve a positive net gain. Number of incidences/ area affected by non-compliance with threatened species legislation and policy. Measure trends over time.	high ongoing
	To clearly identify and provide protective measures for fragile natural areas under bush regeneration/ restoration.	C15	Clearly delineate management zones [ie. natural areas and remnant native populations under regeneration/ restoration strategy]. Install protective fencing and signage to identify and protect fragile natural areas from inappropriate maintenance/ mowing regimes, trampling and compaction. Establish opportunities for natural recruitment/ regeneration.	Area under bush regeneration/ restoration per annum. Measure trends over time.	very high ongoing
	To establish viable natural areas and to promote long-term sustainability.	C16	Use a minimal disturbance bush regeneration approach where positive net gains are achievable [ie. relatively high level of resilience]. Monitor and review outcomes. Ensure dependent and threatened species habitat is protected and enhanced under a staged program of consolidation.	as above Measure trends over time.	very high ongoing
	To establish a representative level of species and structural diversity.	C17	Provide restoration, enhancement and reinstatement strategies for natural areas/ remnant populations which display a high level of clearing, soil disturbance and weed invasion.	Area under restoration/ enhancement per annum. Relative condition/ resilience [over 5 years].	high ongoing
	To secure genetic integrity as a key component of the restoration and enhancement strategy.	C18	Use local native, provenance-sourced species [ie. local genotypes]. Ensure that existing site soils are not amended and that soils or mulches are not imported for use in these strategies, including translocation or use of ex situ soil profiles and seed banks.	% species consistent with provenance. Measure trends over time.	high ongoing
	To protect floristic and structural integrity of rare and threatened ecological community.	C19	Ensure that no supplementary restoration or enhancement planting is conducted within or along the edges to the Western Sydney Dry Rainforest [escarpment adj. to lookout]. Use only minimal disturbance bush regeneration techniques. Continue to remove weeds and consolidate buffers/ edges. Ensure bushfire reduction measures [eg. 'burn-offs'] are excluded from WSDR. Restrict opportunities for dumping refuse, multiple tracking, lopping or removal of native vegetation on escarpment/ lookout.	Relative condition/ resilience of WSDR [over 5 years]. Works implemented in accordance with this Plan. Measure trends over time.	very high ongoing
	Protect natural/ cultural setting: To protect and manage existing natural/ cultural setting and to ensure that additional planting is consistent with restoration strategy.	C20	Ensure that future landscaping [incl. additional native planting] is consistent with weed management/ restoration strategy [see items C7-C19]. Additional planting should reinforce the natural setting and provide shade, enhanced visual quality, habitat and bio-linkages as well as supporting passive recreational opportunities.	Works implemented in accordance with this Plan. Number and species of trees/ groundcovers planted and survive after 5 years.	ongoing
	To protect and manage scenic vistas.	C21	Protect, maintain and manage scenic vistas and view corridors along escarpment/ lookout. All arboricultural work to be conducted by a qualified arborist. Do not permit broad-scale clearing/ lopping or topping strategies by unqualified labour.	Works implemented in accordance with this Plan.	
	To maintain a quality landscape setting. To address security and public safety issues.	C22	Provide a maintenance regime which affords a high level of passive surveillance and security for visitors and protects important sight-lines [ie. near car parking areas, vehicular entry/ exit points, picnic areas/ amenities and pathways.	Works implemented in accordance with this Plan. Visitor safety and security issues addressed.	ongoing

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TABLE 5 [cont'd]
ACTION PLAN

	Performance Target (Management objectives)	Item	Means of Achievement (Management Actions)	Means of Assessment (of the actions)	Priority
environment	**Desired Outcome: To protect, manage and enhance environmental quality, scenic character and biodiversity values.** **Core Objectives: Management of community land categorised as park (36G), natural area: bushland (36J), natural area: escarpment (36L) and natural area: watercourse (36M).**				
	Bushfire and flood management: To protect life, property and the environment. To promote cooperative partnerships.	C23	Liaise with Hawkesbury Rural Fire Service and DECC to establish an appropriate fire management regime [incl. no fuel and reduced fuel zones to adjoining properties]. Promote cooperative plans to facilitate an appropriate ecological fire regime for the reserve's endangered ecological communities [incl. expanding buffer zones and establishing thresholds for protecting biodiversity and threatened species].	Appropriate fire regimes implemented in accordance with cooperative plans.	high ongoing
	To address ecological fire management issues affecting the reserve's EECs.	C24	Seek necessary approvals for ecological burn-offs during weed management/ restoration works. Ensure protection of fragile ecological communities [see item C19].	Approvals granted for ecological fire management.	high ongoing
	To address flood planning, public safety and risk management.	C25	Ensure that flood planning, management and provision of public access and recreational infrastructure are consistent with relevant strategies and plans.	Planning and procedures implemented in accordance with relevant plans.	ongoing
recreation, access and facilities	**Desired Outcome: To maintain and enhance existing recreational facilities and to improve public access, linkages and opportunities for passive recreation.** **Core Objectives: Management of community land categorised as park (36G), natural area: bushland (36J), natural area: escarpment (36L) and natural area: watercourse (36M).**				
	Public access and recreational facilities: To maintain and enhance existing passive recreational open space and facilities. To protect fragile natural areas from unsympathetic management regimes.	D1	Improve standard and level of maintenance of reserve/ lookout [incl. regular removal of litter/ dumped rubbish and garden refuse, removal of stockpiled materials, general repairs] and improve monitoring and regulation of anti-social behaviour [eg. vandalism]. Clearly delineate areas under regeneration/ restoration. Restrict mowing/ trimming in these areas [see item C15]. Ensure regular mowing of grassed picnic area/ lookout.	Maintenance in accordance with service standards. Designated natural areas under regeneration protected. Measure trends over time.	very high ongoing
	To provide a quality natural setting for local and regional visitors. To improve scenic quality and public safety. To rationalize/ replace ageing, damaged or non-functional infrastructure.	D2	Improve quality of existing passive open spaces and facilities, including picnic areas, shade/ shelter, car parking areas, public amenities, pathways, lookout and signage: - repair/ maintain and extend existing safety fence along escarpment [see item D3]; - rationalize uncontrolled vehicular access/ construct new carparking area [see item D11]. - rationalize/ upgrade picnic area and facilities [see items D5-D7]; - upgrade pedestrian linkages and circulation throughout reserve [see item D5]; - upgrade/ extend existing amenities building [see item D13]; - install appropriate signage [see items D8-D10];	Proposed staged development/ capital works items completed subject to appropriate funding.	ongoing
	To restrict public access to escarpment. To address public safety issues.	D3	Repair/ maintain existing safety fence [1.2m high chain-wire] adjacent to picnic area and extend safety fencing along eastern portion of reserve.	Maintenance in accordance with service standards. Works implemented subject to appropriate funding.	very high
	To improve bank stability and restrict erosion. To address issues affecting environmental quality.	D4	Re-grade/ re-direct surface run-off and erosion away from escarpment edge [lookout/ picnic area near amenities building]. Relocate meter boxes [see item A11].	as above	very high
	To enhance pedestrian linkages and circulation.	D5	Construct shared pedestrian/ cycleway access between proposed car parking area [see item D11] and picnic area/ public amenities and lookout.	Works implemented subject to appropriate funding.	high
	To address suitability, use and aesthetics of ageing recreational facilities. To enhance visitor experience.	D6	Rationalize existing timber slat/ metal frame picnic tables/ seating [6No.] incl. provision of new picnic/ BBQ shelter [incl. 2 X gas hot-plates] in western grassed area/ lookout [subject to removal of internal roadway].	as above	medium
	To improve public amenities and services.	D7	Install additional litter bins [3No.] in picnic area/ car parking area and provide a water-point/ bubbler and tap.	as above	medium

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TABLE 5 [cont'd]
ACTION PLAN

recreation, access and facilities

Performance Target (Management objectives)	Item	Means of Achievement (Management Actions)	Means of Assessment (of the actions)	Priority
Desired Outcome: To protect, manage and enhance environmental quality, scenic character and biodiversity values. **Core Objectives: Management of community land categorised as park (36G), natural area: bushland (36J), natural area: escarpment (36L) and natural area: watercourse (36M).**				
Public access and recreational facilities [cont'd]: To promote reserve as a regional visitor attractor/ destination point. To improve visitor orientation, recreational experience, awareness of heritage items and appropriate behaviour, facilities/ amenities, linkages and scenic lookout.	D8	Install directional signage at key intersections along approaches to lookout [ie. both ends of Terrace Road/ particularly the North Richmond/ Bells Line intersection].	Works implemented subject to appropriate funding.	high
	D9	Install identification signage "Streeton Lookout" adjacent to Terrace Road/ Cliff Road intersection [ie. access to lookout/ picnic area and proposed car parking area].	Works implemented subject to appropriate funding.	high
	D10	Develop and install an integrated system of signage to 'brand' the reserve as part of the Artist's Trail and to highlight the reserve's significant natural, scenic, Aboriginal and cultural values. Signs should be durable, vandal- resistant and include use of maps, sensory and multi-lingual options [see items B4-B6].	Works implemented subject to appropriate funding.	high
To restrict uncontrolled vehicular access/ movements affecting environmental quality. To improve standard and quality of facilities. To provide a safe pedestrian environment. To facilitate opportunities for larger vehicles/ tour bus movements and parking. To improve overall amenity value and facilitate broad community access. To enhance environmental values and promote natural regeneration/ recruitment of fragile natural areas. To address issues of compaction and die-back of remnant woodland. To improve park security and public safety.	D11	Rationalize/ upgrade existing unsealed car parking and large vehicle turning areas: - install vehicular barriers [large dimension sawn hwd. posts/ rails] along boundary to reserve/ lookout adjoining Terrace Road and Cliff Road - restrict vehicular access into western portion of lookout/ picnic area]/ re-contour compacted roadway/ turning areas and restore passive open space/ landscaping incl. protection/ recruitment of natural woodland [see items C15-C22]; - formalise entry/ exit point off Cliff Road and construct car parking area [incl. sealed bitumen finish, marked car spaces, timber vehicular barriers/ bollards, provision for large vehicle/ tour buses turning and parking, security lighting and landscaping/ restoration of remnant woodland; - provide local bus lay-by/ bus stop adj. to Cliff Road [restrict vehicular access/ thoroughfare along front of reserve]. Liaise with bus company/ tour operators; - construct shared pedestrian/ cycleway access between car parking area, amenities building, picnic area and lookout.	Works implemented in accordance with this Plan of Management and subject to available funding.	high
Picnic area/ lookout: To provide safe, durable access to scenic viewpoint and protect environmental quality.	D12	Install elevated timber deck/ access with hand-rails to lookout point [near fenceline] linked to picnic area/ facilities and car parking area. Integrate existing Artist's Trail signage and provide additional interpretive signage [see item D10].	Works implemented in accordance with this Plan of Management and subject to available funding.	medium
Public amenities building: To facilitate regional visitor access and peak visitor loadings. To improve overall amenity value. To address accessibility issues.	D13	Upgrade/ extend and refurbish existing amenities building to accommodate peak visitor loadings/ bus tour groups [up to 40 people] incl. additional cubicles and disabled facilities. Review options to improve reflective light/ sky-lights, ceiling and floor ventilation/ solar options, water tanks, connection to sewer [currently septic tank system] and provision for meter boxes. Install appropriate ramps/ linkages for disabled access.	Works implemented in accordance with this Plan of Management and subject to available funding.	medium
To provide a high standard of maintenance and to address security and vandalism.	D14	Continue to maintain a high level of general maintenance, cleaning, repairs and lock-up/ security of building [after sunset] to address potential anti-social behaviour, vandalism or other inappropriate behaviour [eg. camping].	Maintenance in accordance with service standards. Number of instances/ targets of vandalism per annum. Measure trends over time.	ongoing
Security lighting: To improve park security and reduce level of vandalism and anti-social behaviour.	D15	Install additional park lighting, including security and ambient lighting, within major nodal areas of recreational activity [ie. car parking area, amenities building and picnic area]. See item A11.	Works implemented in accordance with this Plan of Management and subject to available funding.	medium

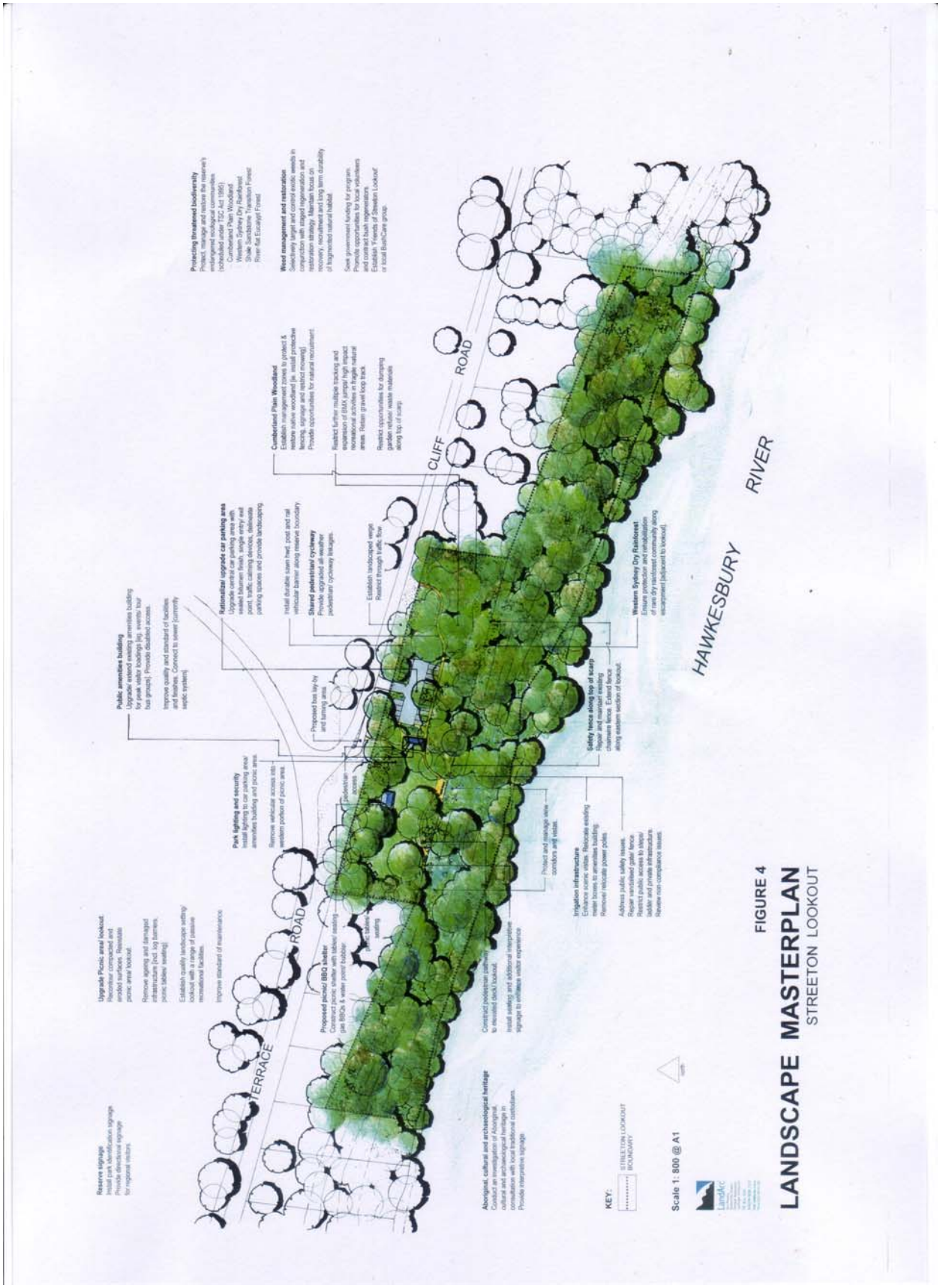
7 of 7

TABLE 6:
CAPITAL WORKS PROGRAM

ITEM	ACTION	CAPITAL COST ($)	IMPLEMENTATION				
			2009	2010	2011	2012	2013
A1-A11	Community land management						
A1	see following items for details	see below					
A2-A4	no capital works component	not costed					
A5	see following items for details	see below					
A6-A8	no capital works component	not costed					
A9-11	review irrigation infrastructure/ urgent repairs & relocation of meter boxes	not costed					
B1-B6	Heritage						
B1-B2	conduct investigations/ consultation with Aboriginal custodians	not costed					
B3-B4	develop and install signage/ consultation [Aboriginal and cultural heritage]	$10,000.00					
B5	continue research/ local historical heritage [see item B6]	see below					
B6	install additional interpretive signage [views/ landmarks & environment]	$10,000.00					
C1-C25	Environment and biodiversity						
C1	continue implementation of water quality and river health priorities	not costed					
C2	resources for design and integration of proposed improvements	see below					
C3-C5	establish strategies to protect, manage and restore threatened habitat	see below					
C6	establish partnerships/ monitor & restrict impacts [see items C7-C22]	see below					
C7-C14	implement integrated weed management/ restoration strategy	$60,000.00					
C15	delineate management zones/ temporary fencing and signage	$5,000.00					
C16-C22	weed management/ restoration strategy [see items C3-C14]	see above					
C15-C16	implement appropriate management/ maintenance strategies	not costed					
C23-C24	promote cooperative plans for bushfire managagement	not costed					
C25	cooperative planning/ liaison - flood planning/ management	not costed					
D1-D15	Recreation, access and facilities						
D1	improve standard/ level of maintenance of lookout/ picnic area	not costed					
D2	maintain/ upgrade passive recreational facilities [see items D3-D15]	see below					
D3	repair existing safety fence & extend eastern section of lookout	$5,000.00					
D4	regrade/ recontour wash-out & restoration [relocate meter boxes - not costed]	$5,000.00					
D5	construct shared pedestrian/ cycleway	$25,000.00					
D6-D7	upgrade facilities/ install new picnic shelter/ BBQs, tables & seating	$50,000.00					
D8-D9	install directional & identification signage	$5,000.00					
D10	install integrated signage system [see items D8-D9 & B3-B4 & B6]	see above					
D11	rationalize/ upgrade vehicular access/ sealed bitumen car & bus parking	$65,000.00					
D12	install lookout elevated decking/ seating	$15,000.00					
D13-D14	upgrade/ extend existing amenities building	$50,000.00					
D15	install additional park lighting targeting nodal areas of activity	$20,000.00					
	TOTALS	$325,000.00					

Note: Opinion of probable landscape constructions costs is based on *Fig 4: Landscape Masterplan.* All figures shown are indicative only.

SUMMARY OF ANNUAL BUDGETS	CAPITAL COST ($)
2009	$27,000.00
2010	$117,000.00
2011	$67,000.00
2012	$67,000.00
2013	$47,000.00
TOTALS	$325,000.00


Reserve signage
Install park identification signage.
Provide directional signage for regional visitors.
Upgrade Picnic area/ lookout.
Recontour compacted and eroded surfaces. Reseed picnic area/ lookout.
Remove ageing and damaged infrastructure (eg. BBQs, picnic tables/ seating)
Establish quality landscape setting/ lookout with a range of passive recreational facilities.
Improve standard of maintenance.
TERRACE
ROAD
Proposed picnic/ BBQ shelter
Construct pedestrian pathway to elevated deck/ lookout
Aboriginal, cultural and archaeological heritage
Conduct an investigation of Aboriginal, cultural and archaeological heritage in consultation with local traditional custodians.
Provide interpretive signage.
Public amenities building
Upgrade/ extend existing amenities building for peak visitor loadings (eg. events/ tour bus groups). Provide disabled access.
Improve quality and standard of facilities and finishes. Connect to sewer (currently septic system).
Park lighting and security
Install lighting to car parking area/ amenities building and picnic area.
Remove vehicular access into western portion of picnic area
Rationalise/ upgrade car parking area
Upgrade central car parking area with sealed bitumen finish, single entry/ exit point, clear circulation, defined/ delineated parking spaces and provide landscaping
Proposed bus bay/ dry and turning area
Install durable steel, post and rail vehicular barrier along reserve boundary
Shared pedestrian/ cycleway
Provide upgraded all-weather pedestrian/ cycleway linkages.
Establish landscaped verge. Restrict through traffic flow
Cumberland Plain Woodland
Establish management zones to protect & restore native woodland (ie. install protective fencing, signage, weed control)
Provide opportunities for natural recruitment
Restrict further multiple tracking and recreational activity. Provide natural areas. Retain gravel loop track
Restrict opportunities for dumping garden refuse/ waste materials along top of scarp
CLIFF
ROAD
Protecting threatened biodiversity
Protect, manage and restore the reserve's endangered ecological communities (scheduled under TSC Act 1995)
- Cumberland Plain Woodland
- Western Sydney Dry Rainforest
- Shale Sandstone Transition Forest
- River-flat Eucalypt Forest
Weed management and restoration
Selectively target and control exotic weeds in accordance with vegetation zones and restoration strategy. Maintain focus on recovery, recruitment and long term durability of fragmented natural habitat.
Seek government funding for program. Promote opportunities for local volunteers and community groups. Establish 'Friends of Streeton Lookout' or local BushCare group.
Irrigation infrastructure
Extend irrigation. Rationalise existing meter boxes on amenities building. Remove/ relocate power poles
Address public safety issues. Repair vandalised gate fence. Restrict public access to steep/ unsafe and private infrastructure. Review non-compliance issues.
Safety fence along top of scarp
Repair and maintain existing chainwire fence. Extend fence along eastern section of lookout.
Western Sydney Dry Rainforest
Ensure protection and rehabilitation of rare dry rainforest community along escarpment (adjacent to lookout).
HAWKESBURY
RIVER
Private and manage view corridors and/ or vistas.
Install seating and additional interpretive signage to enhance visitor experience
KEY:
STREETON LOOKOUT BOUNDARY
Scale 1: 800 @ A1
FIGURE 4
LANDSCAPE MASTERPLAN
STREETON LOOKOUT

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APPENDICES

I: Community Consultation – presentation material and submissions
II: Schedule of Existing Native Plant Species
III: Schedule of Exotic Weed Species

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STREETON LOOKOUT, FREEMAN'S REACH
DRAFT PLAN OF MANAGEMENT

Why do we need a plan of management?

Streeton Lookout is community land owned by Hawkesbury City Council. A community land plan of management provides the framework for managing community land. A plan of management must be prepared in accordance with the *Local Government Act 1993*. Community consultation is an important part of this process.

Sustainability is a key principle guiding this process. The draft plan of management aims to contribute to an ecologically sustainable city and region and add to the quality of life in the Hawkesbury City local government area. Streeton Lookout has a range of natural, cultural, social, environmental and recreational values. It is important that the draft plan of management establishes how these values should be protected, managed and enhanced.

What is the purpose of a community workshop?

The main purpose of the community workshop is to discuss the way the community values the reserve and to identify important issues affecting these values and opportunities for future sustainable management. The workshop aims to provide a transparent and equitable forum for all user groups, stakeholders and individuals.

To support any comments you wish to make please fill out the ***Community Issues Questionnaire***. Please leave completed issues questionnaires at the desk when you leave or if you need more time these can be mailed to:

LandArc Pty Limited
PO Box 304
Avalon NSW 2107

Please return questionnaires within ten (10) days.

If there are any specific issues you need to discuss following the community workshop, please contact the Director of LandArc, Noel Ruting during office hours on 9973 1330.

Community issues raised at the workshop will be addressed in the draft plan of management. Further comments on the draft will be invited during the public exhibition period.

What are the expected outcomes for the draft plan of management?

The draft plan of management will establish a framework for managing the reserve in accordance with the *Local Government Act 1993* and other relevant legislation. The following will be addressed:-

- establish the reserve's role in the Hawkesbury City Council LGA;
- identify existing uses, improvements and condition of facilities and buildings;
- categorise the community land in accordance with relevant legislation;
- identify and assess the reserve's values (ie. environmental, scenic, recreational, cultural, social, commemorative, etc);
- identify and assess key issues affecting the reserve's values;
- establish future permitted uses, activities and development (including intensity and scale);
- develop appropriate management strategies and actions based on a balanced, sustainable approach to resource management;
- assign priorities for a strategic plan (5-years) and estimated capital works expenditure; and
- prepare a landscape master plan.

When will the draft plan of management be exhibited?

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The draft plan of management will go on public exhibition at Council's Administration Centre, Hawkesbury Central Library (in the Deerubbin Centre), Windsor and Council's web-site. It is envisaged that the draft plan of management will be completed by January 2009.

The draft plan of management goes on public display for four weeks and a further two weeks are allowed for final written submissions (ie. a total of 6 weeks for submissions from commencement of public exhibition to closure). The public exhibition dates will be advertised by Council.

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STREETON LOOKOUT

Community Workshop
Draft Plan of Management

6.30pm – Thursday 16th October 2008
Tebbutt Room, Deerubbin Centre
300 George Street, Windsor

1. Welcome & introductions

2. Brief overview of plan of management process

3. Discussion

- ❖ Planning & Context:
  - Hawkesbury City LGA/ regional context
  - location/ reserve boundaries
  - community land (legislative requirements)
  - categorization of community land

- ❖ Community land – reserve's values:
  - rural/ natural setting
  - landscape character/ scenic qualities
  - environmental and biodiversity values
  - public access, recreational, cultural and social values
  - passive recreational facilities

- ❖ Management issues:
  - weed management
  - protection, management and rehabilitation of natural areas (endangered ecological communities)
  - recreational impacts (eg. vehicular access, multiple tracking/ BMX, garden refuse/ rubbish dumping, vandalism, etc)
  - irrigation infrastructure
  - public safety/ risk management
  - existing visitor facilities and opportunities
  - interpretation/ environmental education
  - planning issues and relevant legislation

4. Conclusion

- time-frame for draft plan of management
- public exhibition and plan adoption
- exploring issues papers

LandArc Pty Limited October 2008

Community Issues

Draft Plan of Management
Streeton Lookout, Freeman's Reach

A draft plan of management is being prepared for Streeton Lookout, Freeman's Reach. Community consultation is a vital part of the plan of management process. Please take a few minutes to fill out the following questionnaire.

1. **May we have some personal details.** *(please circle item)*

a. AGE

<20 20-35 36-50 50-65 >65

b. SEX

Male Female

2. **Please provide your residential postcode.**

3. **How often do you visit the reserve?** *(please tick box)*

- ☐ Less than once a year
- ☐ 1-3 times a year
- ☐ 4-6 times a year
- ☐ Frequent visitor *(please circle item below)*

monthly weekly most days

4. **Do you have a seasonal preference for visiting the reserve?**
(please circle items as applicable)

summer winter all year round

5. **What do you like most about the reserve?**

please continue over page

6. What do you believe are the three most important issues affecting the reserve?

What actions would you suggest to address these issues?

a) Please describe below the first issue you wish to raise.

b) Please describe below the second issue.

c) Please describe below the third issue.

Thank you.

Please return this survey to the desk before you leave or mail within 10 days to:

LandArc Pty Limited
PO Box 304
Avalon NSW 2107

APPENDIX II:

Schedule of Existing Native Plant Species

Streeton Lookout supports four distinctive ecological communities, all of which are scheduled as endangered ecological communities in the NSW *Threatened Species Conservation Act 1995*, as follows:

1. Cumberland Plain Woodland (CPW) [Shale Hills Woodland/ Moist Shale Woodland];
2. Shale Sandstone Transition Forest (SSTF) [Low sandstone influence];
3. Western Sydney Dry Rainforest (WSDR);
4. River-flat Eucalypt Forest (RFEF) [no ground survey conducted].

Native plant species are listed in alphabetical order and based on field surveys/ sampling by Noel Ruting (Director, LandArc Pty Limited) and Michelle Engelhardt (Hawkesbury City Council) on 3 September 2008 and 11 December 2008.

KEY TO HABITATS WITHIN RESERVE:

CPW	=	Cumberland Plain Woodland
SSTF	=	Shale Sandstone Transition Forest
WSDR	=	Western Sydney Dry Rainforest (remnant)
RFEF	=	River-flat Eucalypt Forest
ALL	=	occurs in all communities/ habitats in reserve

KEY TO LOCATION WITHIN RESERVE:

L	=	lookout/ picnic area (upper flat level – modified ground/ shrub stratum)
E	=	steep embankment/ scarp adj. to lookout/ picnic area (largely cleared/ some canopy spp. present)
S[adj.]	=	adjacent slopes – eastern and western sections (largely intact forest)
R	=	lower riverbank (predominantly cleared)
*	=	species occurs on adjoining land (eastern section only)

BOTANICAL NAME	COMMON NAME	LOCATION
TREES (8+ metres in height)		
Brachychiton populneus	Kurrajong	WSDR+E
Casuarina cunninghamiana	River Oak	RFEF+R
Eucalyptus crebra	Narrow-leaved Ironbark	ALL except RFEF+R
Eucalyptus fibrosa	Broad-leaved Ironbark	ALL except RFEF+R
Eucalyptus moluccana	Grey Box	ALL except RFEF+R
Eucalyptus punctata	Grey Gum	SSTF/ WSDR+E/ S
Eucalyptus tereticornis	Forest Red Gum	ALL except RFEF+R
Melia azedarach var. *australasica*	White Cedar	WSDR+E
SMALL TREES/ SHRUBS (up to 7 metres in height)		
Alectryon subcinereus	Native Quince	WSDR+E
Backhousia myrtifolia	Grey Myrtle	WSDR+E
Breynia oblongifolia	Common Breynia	SSTF/ WSDR+E/ S

BOTANICAL NAME	COMMON NAME	LOCATION
continued		
SMALL TREES/ SHRUBS (up to 7 metres in height)		
Bursaria spinosa	Blackthorn	SSTF/ WSDR+E/ S
Citriobatus pauciflorus	Orange Thorn	WSDR+E
Daviesia ulicifolia	Gorse Bitter-pea	SSTF+S*
Goodenia ovata	Hop Goodenia	ALL except RFEF+R
Indigofera australis	Native Indigo	SSTF/ WSDR+E/ S
Notelaea longifolia forma *longifolia* [1No. very old specimen on slope]	Large Mock Olive	WSDR+E
Solanum prinophyllum	Forest Nightshade	CPW/ WSDR+L/ E
GROUNDCOVERS (incl. GRASSES, SEDGES, FORBS & FERNS) & EPIPHYTES		
Aristida ramosa	Three-awn Speargrass	CPW/ SSTF+L/ S
Austrostipa ramosissima	Stout Bamboo Grass	CPW/ WSDR+L/ E
Brunoniella pumilio	Dwarf Trumpet	CPW+L
Caesia parviflora	Pale Grass Lily	CPW+L
Chloris truncata	Windmill Grass	CPW+L
Chloris ventricosa	Tall Chloris	CPW+L
Commelina cyanea	Scurvy Weed	CPW+L
Dichondra repens	Kidney Weed	CPW/ SSTF+L/ S
Einadia nutans	Native Sea-berry	CPW/ WSDR+L/ E
Einadia trigonos		CPW/ WSDR+L/ E
Entolasia stricta	Wiry Panic	CPW/ SSTF+L/ S
Opercularia hispida	Stink Weed	WSDR+E
Oxalis perennans		CPW+L
Paspalidium criniforme	Fine Panic	CPW+L
Plantago debilis	Slender Plantain	CPW+L
Plectranthus parviflorus	Cockspur Flower	CPW/ WSDR+L/ E
Sporobolus creber	Western Rat's Tail Grass	CPW+L
Themeda australis	Kangaroo Grass	SSTF+S*
Vittadinia pustulata	Fuzzweed, New Holland Daisy	CPW+L
Vittadinia sulcata	Fuzzweed, New Holland Daisy	CPW+L
Wahlenbergia gracilis	Native Bluebell	CPW+L
CLIMBERS & TWINERS		
Aphanopetalum resinosum	Gum vine	WSDR+E
Celastrus australis	Staff Vine	CPW/ WSDR+L/ E
Clematis glycinoides	Old Man's Beard	SSTF/ WSDR+E/ S
Geitonoplesium cymosum	Scrambling Lily	SSTF/ WSDR+E/ S
Glycine microphylla	Love Creeper	CPW+L
Pandorea pandorana	Wonga Wonga Vine	WSDR+E

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APPENDIX III:

Schedule of Exotic Weed Species

KEY:
The following cultivated exotic plants and weed species were identified during site investigations. The species are scheduled in alphabetical order.

1. NOXIOUS WEED SPECIES (WEED CLASS)
Species declared noxious within the Hawkesbury River County Council area under the *Noxious Weeds Act 1993* are shown with a Weed Class as applicable:

N1 The plant must be eradicated from the land and must be kept free of the plant.
N2 The plant must be eradicated from the land and must be kept free of the plant.
N3 The plant must be fully and continuously suppressed and destroyed.
N4 The growth and spread of the plant must be controlled according to the measures specified in a management plan published by the local control authority.
N5 Compliance with requirements in the *Noxious Weeds Act 1993* for a notifiable weed.

2. ENVIRONMENTAL WEED SPECIES
E The plant has been declared as an environmental weed species (ie. invasive) within the Sydney West – Blue Mountains Region.

3. CULTIVATED/ ORNAMENTAL SPECIES & GARDEN ESCAPES
C Cultivated/ ornamental species within reserve (non-invasive)
C* Cultivated/ naturalised species including Australian natives (ie. not local genotype or unknown provenance) or exotic garden escapes which are either known to be invasive or potentially invasive.

BOTANICAL NAME	COMMON NAME	CLASS
TREES (8+ metres in height)		
Eucalyptus spp.	Eucalypt (unidentified)	C
SMALL TREES & SHRUBS (up to 7 metres in height)		
Lantana camara	Lantana	E
Ligustrum lucidum	Large-leaved Privet	N4
Ligustrum sinense	Small-leaved Privet	N4
Opuntia sp.	Prickly Pear	N4
Sida rhombifolia	Paddy's Lucerne	-
Solanum mauritianum	Wild Tobacco Tree	-
GROUNDCOVERS (incl. GRASSES, SEDGES, FERNS & SUCCULENTS)		
Agave americana	Century Plant	C*
Bidens pilosa	Cobbler's Peg	-
Bryophyllum tubiflora	Chandelier Plant	C*
(syn. B. delagoense)	Mother of Millions	-
Cerastium glomeratum	Chick Weed	-
Chloris gayana	Rhodes Grass	-
Cirsium vulgare	Spear Thistle	-
Cynodon dactylon	Common Couch	-

BOTANICAL NAME	COMMON NAME	CLASS
continued		
GROUNDCOVERS (incl. GRASSES, SEDGES, FERNS & SUCCULENTS)		
Eragrostis curvula	African Love Grass	-
Pelargonium sp.	Geranium	-
Pennisetum clandestinum	Kikuyu Grass	-
Portulaca oleracea	Pigweed	-
Senecio madagascariensis	Fireweed	-
Sonchus oleraceus	Common Sowthistle	-
Sporobolus africanus	Parramatta Grass	-
Tagetes minuta	Stinking Roger	-
Tradescantia fluminensis	Trad	E
Tradescantia sp. (large-leaf form)	Trad	E
Trifolium repens	White Clover	-
CLIMBERS & TWINERS		
Araujia sericiflora (syn. *A. hortorum)*	Moth Vine	E
Asparagus asparagoides (syn. *Myrsiphyllum asparagoides)*	Bridal Creeper	E
Delairea odorata (syn. *Senecio mikanoides)*	Cape Ivy	E
Lonicera japonica	Japanese Honeysuckle	E
Sechium edule	Choko Vine	-

…